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OHS MANAGEMENT SYSTEMS AUDITS AS A REGULATORY INSTRUMENT OF PSYCHOSOCIAL RISKS – PRINCIPLES AND PRACTICE

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OHS management systems audits as a regulatory instrument of psychosocial risks – principles and practice

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Summary

Background: Psychosocial risks are closely related to work organization, management and organizational context. The nature of psychosocial risks is acknowledged to be conceptually distinct from other more traditional OHS risks. The majority of psychosocial risks are "invisible", difficult to measure, intangible, multi-causal, subjective and contextual. One way of controlling psychosocial risks is through the OHS management systems. Such systems can be certified according to the standard OHSAS 18001 which has gained considerable worldwide acceptance. The OHSAS 18001 standard explicitly claims to control all OHS risks, including psychosocial risks, and the audit is a key element in certified OHS management systems. The audit is founded on an evidence-based approach. Previous empirical research have indicated difficulties of addressing and auditing psychosocial risks in certified OHS management systems in a Danish context, and the difficulties have been related to the way audits of the management systems are carried out.

Aim: The main aim of the PhD project is to develop a concept for an audit methodology that is able to capture the management of psychosocial risks in an adequate manner.

Methods: The design and methods are based on a qualitative approach and a critical realism paradigm. Four studies have been carried out in order to fulfill the aim. First, a case study in two Danish municipalities has been conducted, investigating how they translate the audit principles into practice. Second, document analysis of two OHS management systems standards – OHSAS 18001 and "Guidance on the management of psychosocial risks in the workplace" (PAS 1010) – has been undertaken in order to understand the mechanism by which they work, particularly in relation to psychosocial risks. Third, an analysis was made of the characteristics of psychosocial risks as part of the understanding of why it is difficult to include the psychosocial risks in audit. Fourth, the empirical data from the case study, inclusive of other empirical case studies conducted in cooperation with the CERPA project, and the analyses provide the basis for developing the concept. It is founded on PAS 1010, which is a supplement to OHSAS 18001 but expands on the specific needs for managing psychosocial risks. The concept is based on the realistic evaluation perspective that bridges the process and outcome evaluation. This perspective also provides an opportunity to integrate context-independent global knowledge with context-dependent local knowledge.

Results: Study 1: Empirical data from two municipalities in Denmark showed significant variations in implementation and auditing the management systems. Auditors found it difficult to identify psychosocial risks because these risks were not considered directly observable, intangible, sensitive and dependent of the context. Audits were directed towards the formalized, documented and visible aspects of the psychosocial risk management process and little focus was on informal aspects such as cultural and political issues. It was also difficult for the auditors to assess the quality of the various elements of the risk management process and almost no focus was put on the relationship between process and effect. No nonconformities were indicated in the actual psychosocial working environment although psychosocial risks were recognized as a major challenge in most workplaces. Thus, compared to traditional safety audits psychosocial risk management, audits appear to require development of additional audit methods and auditor competencies.

Study 2: The analysis shows that the management principles in PAS 1010 can be viewed as a significant contribution to remedy the shortcomings in OHSAS 18001. PAS 1010 includes work organization and management and understands psychosocial risks as multi-causal, dynamic, and contextual and an explicit participative approach is advocated in management of psychosocial risks. The two standards are based on different epistemology. OHSAS is based on a de-contextualized knowledge base while PAS 1010 attempts to combine a decontextualized knowledge base with contextualized knowledge. The different kinds of epistemology are reflected in the evidence method. PAS 1010 specifies psychosocial risk management a systematic evidence-informed method which may indicate something different from the term evidence-based method used in OHSAS 18001. It is not specified in the two standards, however, how the different terminology is to be understood and translated into practice.

Study 3: The analysis showed that the features of psychosocial risks have consequences for OHS regulation. The wicked character means that psychosocial risks cannot be controlled through a command and control regulatory approach. The command and control approach is based on an assumption of clear cause-effect relationships or mono-causal expert knowledge, which is most appropriate to apply when the problems have unambiguous and certain solutions or when the problems are tame. In management systems auditing, the knowledge base has, within the established audit discourse, been dominated by technical mono-causal expert knowledge and this knowledge base seems to be reflected in the process of gathering audit evidence. Apparently, in the established audit discourse, evidence tends to be understood as something that is directly observable, either in the form of documents or as something that can be directly observed. However, in neither OHSAS nor PAS 1010 is it specified how evidence has to be understood.

Study 4: Based on our analyses of the established audit discourse in a Danish context, the characteristics of the OHSAS 18001 standard and the characteristics of psychosocial risks, the practical and theoretical challenges to audit psychosocial risks are primarily due to the strong influence of the positivistic approach. This paradigm has difficulties with handling invisible, contextual, political and complex issues. In view of these challenges, a concept is developed which is more suitable for handling the special nature of psychosocial risks in certified OHS management systems. The audit concept is founded on PAS 1010, the specific features of psychosocial risks as wicked problems and realistic evaluation. Organizations are understood as open, social systems and realistic evaluation offers the possibility to integrate context-independent global knowledge with context-dependent local knowledge. This means that audits, in a realistic perspective, will have an expanded knowledge base that creates a broader understanding of what is considered valid audit evidence.

Conclusion: The new audit concept has implications for the auditor competencies. In the assessment of compliance based on the combination of generalized and local knowledge, the competencies of the auditor are crucial. Knowledge and skills development should therefore be undertaken to improve auditors' qualifications in assessing psychosocial risks and the psychosocial risk management process. The concept should be implemented into practice including testing of guidelines and tools. There will also be a need to evaluate whether the concept can be turned into an effective instrument for regulating psychosocial risks in practice.

Dansk resumé

Baggrund: Psykosociale risikofaktorer er tæt relateret til det daglige arbejdes indhold, måden arbejdet er organiseret på samt ledelse og kontekst. Karakteren af psykosociale risikofaktorer er anerkendt for at adskille sig fra andre mere traditionelle risikofaktorer i arbejdsmiljøet. De fleste psykosociale risikofaktorer er "usynlige", svære at måle, immaterielle, multi-kausale, subjektive og kontekstuelle. En måde at kontrollere eller styre psykosociale risikofaktorer på er gennem arbejdsmiljøledelsessystemer. Sådanne systemer kan være certificeret i henhold til den internationalt baserede og dominerende OHSAS 18001 standard, der eksplicit hævder at kunne styre alle OHS risici, herunder psykosociale risikofaktorer. Audit er et centralt element i certificerede arbejdsmiljøledelsessystemer og bygger på en evidensbaseret tilgang. Tidligere empirisk forskning har indikeret, at der er vanskeligheder ved at auditere det psykosociale arbejdsmiljø i en dansk kontekst, og vanskelighederne er blevet relateret til måden audit af arbejdsmiljøledelsessystemer udføres på.

Formål: Hovedformålet med ph.d.-projektet er at udvikle et koncept for en auditmetodologi, der vil være i stand til at håndtere ledelse af psykosocialt arbejdsmiljø på en passende måde.

Metode: Projektets design og metode er baseret på kvalitativ metode og en kritisk realistisk tilgang. Fire undersøgelser er blevet gennemført for at opfylde målet. Den første undersøgelse, som er et case studie i to danske kommuner, har undersøgt, hvordan de generelle auditprincipper er blevet omsat til praksis. Den anden undersøgelse er en dokumentanalyse af relationen mellem det psykosociale arbejdsmiljø og teksten i standarderne OHSAS 18001 og PAS 1010, som er målrettet håndtering af psykosociale risikofaktorer. I den tredje undersøgelse er der foretaget en analyse af karaktertrækkene ved det psykosociale arbejdsmiljø som et led i forståelsen af de særlige udfordringer, der er ved at inddrage det psykosociale arbejdsmiljø i arbejdsmiljøledelsessystemer. Den fjerde undersøgelse er udviklingen af et koncept på grundlag af de empiriske data fra casestudiet og andre empiriske casestudier gennemført i samarbejde med CERPA projektet, og analyserne i undersøgelse to og tre. Konceptet bygger på PAS 1010, de særlige træk ved psykosocialt arbejdsmiljø og er baseret på realistisk evalueringsperspektiv, der bygger bro mellem processer og resultater.

Resultater: Første undersøgelse: Empiriske data fra de to kommuner i Danmark viste betydelige forskelle i implementeringen af arbejdsmiljøledelsessystemet. De interne auditorer fandt det vanskeligt at identificere problemer i det psykosociale arbejdsmiljø, fordi disse problemer eller risikofaktorer blev opfattet som ikke direkte observerbare, immaterielle, følsomme og afhængige af konteksten. Auditorerne havde især fokus på de formaliserede, dokumenterede og synlige aspekter ved ledelse af psykosocialt arbejdsmiljø og lidt fokus på uformelle aspekter såsom de kulturelle og politiske aspekter. Det var også svært for auditorerne at vurdere kvaliteten af de forskellige elementer i risikostyringsprocessen og næsten ingen opmærksomhed blev rettet mod forholdet mellem proces og effekt. Ingen afvigelser (ikke-opfyldelse af krav, fx lovkrav) blev givet i det faktiske psykosociale arbejdsmiljø, selv om det psykosociale arbejdsmiljø blev opfattet som en stor udfordring på de fleste arbejdspladser. Det synes således nødvendigt at udvikle nye auditmetoder og kompetencer i forhold til at kunne håndtere psykosocialt arbejdsmiljø i et certificeret arbejdsmiljøledelsessystem.

Anden undersøgelse: Analysen viste, at ledelsesprincipperne i PAS 1010 kan opfattes som et væsentligt bidrag til at afhjælpe manglerne i OHSAS 18001. PAS 1010 inkluderer arbejdsorganisering og ledelse og forstår psykosociale risikofaktorer som multi-kausale, dynamiske og kontekstuelle. Endvidere anbefales en eksplicit participatorisk tilgang til ledelse af psykosocialt arbejdsmiljø. De to analyserede standarder er baseret på forskellig epistemologi. OHSAS er baseret på et dekontekstualiseret vidensgrundlag, mens PAS 1010 forsøger at kombinere et dekontekstualiseret vidensgrundlag med et kontekstualiseret vidensgrundlag. De forskellige former for epistemologi afspejles i metodologien. PAS 1010 specificerer, at ledelse af psykosocialt arbejdsmiljø er en systematisk og evidens-informeret metode, som må indikere noget andet end en evidensbaseret metode, der anvendes i OHSAS 18001. Det er dog ikke specificeret i de to standarder, hvordan den forskellige terminologi skal forstås og oversættes til praksis.

Tredje undersøgelse: Analysen viste, at karaktertrækkene ved det psykosociale arbejdsmiljø har konsekvenser for arbejdsmiljøreguleringen. Det psykosociale arbejdsmiljø har mange karaktertræk til fælles med det der i litteraturen beskrives som "vilde problemer". Det betyder, at risikofaktorer i det psykosociale arbejdsmiljø ikke kan reguleres gennem specifikationer og en command-control tilgang. Denne fremgangsmåde er baseret på en antagelse om klare årsags-virknings-forhold eller mono-kausal ekspertviden, og er mest hensigtsmæssigt at anvende, når arbejdsmiljøproblemerne er entydige eller "tamme". I audit af arbejdsmiljøledelsessystemer har vidensgrundlaget været domineret af teknisk, mono-kausal ekspertviden og dette vidensgrundlag kan afspejles i, hvad der forstås som gyldig audit-evidens. I den etablerede auditdiskurs er der en tendens til at audit-evidens bør forstås som noget direkte observerbart, enten i form af dokumenter eller som noget, der kan observeres direkte. I hverken OHSAS eller PAS 1010 er det dog tydeligt beskrevet, hvordan audit-evidens skal forstås.

Fjerde undersøgelse: Baseret på analyserne af den etablerede auditdiskurs i en dansk kontekst, OHSAS 18001 og PAS 1010 standarderne, samt karaktertrækkene ved psykosocialt arbejdsmiljø synes de praktiske og teoretiske udfordringer ved at auditere ledelse af psykosocialt arbejdsmiljø primært at være forårsaget af den stærke indflydelse af det positivistiske paradigme. Dette paradigme har vanskeligt ved at håndtere "usynlige", kontekstuelle og komplekse problemstillinger. I lyset af disse udfordringer er et koncept udviklet, som er mere egnet til at håndtere de særlige karaktertræk ved psykosocialt arbejdsmiljø. Konceptet bygger på PAS 1010, psykosociale risikofaktorer som "vilde problemer" og realistisk evaluering. Organisationer forstås som åbne, sociale systemer og realistisk evaluering giver mulighed for at integrere kontekstuafhængig global viden med kontekstafhængig lokal viden. Det betyder, at audit i et realistisk perspektiv får et udvidet vidensgrundlag, som skaber en bredere forståelse af, hvad der kan betragtes som gyldigt audit-evidens.

Konklusion: Det nye koncept har implikationer for auditors kompetencer. Kombinationen af generaliseret og lokal viden skal efterfølgende sammenholdes med arbejdsmiljølovgivningens grundlæggende krav om, at det psykosociale arbejdsmiljø skal være sikkerheds- og sundhedsmæssigt fuldt forsvarligt. I og med at denne vurdering ikke bygger på klare specifikationsstandarder kræver det en professionel vurdering af auditor. Auditors kompetencer bliver derved helt afgørende for kvaliteten af vurderingen. Konceptet bør implementeres i praksis, herunder test af vejledninger og værktøjer. Der vil også være behov for at evaluere, om konceptet kan anvendes som et effektivt instrument til at regulere det psykosociale arbejdsmiljø i praksis.

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Contents

1. Introduction

"The standard is said to provide principles;
thus, it does not address the problems
connected with putting principles into practice"
Staffan Furusten, 2000

Large-scale socio-economic and technological changes have, over the last decades, affected workplaces considerably. They are often collectively referred to as "the changing world of work" (EU-OSHA, 2007). These significant changes have resulted in new challenges with regard to workers' occupational health and safety (OHS). One important challenge is psychosocial risks, which are related to the way in which work is designed, organized and managed, as well as the economic and social contexts of work (Bluff et al, 2004; Walters et al 2011; Leka & Cox, 2010). Psychosocial risk factors are now considered to be some of the most significant risk factors in OHS (Goh et al, 2016; EU-OSHA, 2012a; Leka & Jain, 2010; Cox et al, 2000). A large proportion of employees report being exposed to organizational stressors or hazards at work, and the consequences are musculoskeletal disorders, cardiovascular diseases, mental disorders, stress, burnout, reduced quality of life, sickness absence, labor turnover, and decreased motivation and productivity (Kristensen, 2005; Leka & Jain, 2010).

As with other risk factors in the working environment, psychosocial risk factors are regulated. In many countries, the regulation of psychosocial risk factors is generally included in OHS management regulations (Dollard et al, 2007; Hansen et al, 2015), albeit principally in terms of general rules. Psychosocial risks are difficult to manage for the majority of workplaces (Langenhan et al, 2013; Leka et al, 2015; Iavicoli et al, 2014). Regulating psychosocial risk factors tends to be a great challenge for government inspection (Lippel & Quinlan, 2011; Starheim & Rasmussen, 2014). Authorities appear to agree that psychosocial risk factors are fundamentally different from most other risk factors in the working environment and that these differences make them more difficult to regulate than other regulated risk factors in organizational health and safety (Bruhn & Frick, 2011; Johnstone et al, 2011; Rasmussen et al, 2011).

Market-based Occupational Health and Safety management systems (OHS management systems) have been developed into international standards which are used as a regulatory instrument in ensuring organizational health and safety (Frick & Wren, 2000). An international, very widely used standard is the OHSAS 18001 (Fernandes-Muniz et al, 2012). This standard sets requirements for OHS management systems that are applied to manage an organization's OHS risks. The standard claims to be able to handle all risks within OHS, including psychosocial risk factors (OHSAS 18001, 2008). A significant element of an OHS management system is an audit that controls whether the OHS management system has been properly implemented and is effective in managing the organization's OHS risks (Blewett & O'Keffe, 2011; Robson et al, 2012). However, the traditional approach to regulation in auditing, which focuses on safety and accident risks, has been indicated in studies to be inadequate for regulation of psychosocial risks. OHS management systems encounter difficulties, including psychosocial risks, to a significant degree (Hohnen & Hasle, 2011; Leka et al, 2011; Frick & Kempa, 2011; Frick, 2004). Furthermore, management of psychosocial risk factors is generally not

included in audits (Robson et al, 2012; Gallagher & Underhill, 2012) and the exclusion of psychosocial risks in audit practice tends to derive from the manner in which the audit of OHS management systems is conducted (Hasle & Zwetsloot, 2011).

Only limited research-based knowledge exists regarding the regulation of psychosocial risk factors through OHS management systems standards and audits (Bergh et al, 2015). There are no existing studies of how audits work in practice regarding regulation of psychosocial risks and which approaches would be suitable for auditing psychosocial risks. This dissertation is an attempt to fill this gap. The main aim of my PhD project is to develop a concept for an audit methodology that is able to capture psychosocial risk management in an adequate manner. It leads to the following research question:

- What constitutes the practical and theoretical challenges of auditing psychosocial risks at Danish workplaces based on certified OHS management systems, and how can audits be developed in order to cover psychosocial risks in a qualified manner?

The purpose and the research questions of my PhD project have a practical goal. This is linked to the fact that my dissertation has been completed under the Danish educational regulations for an 'industrial PhD' (erhvervs-ph.d.). This type of doctorate requires that the research results have a business application. An industrial PhD project is typically conducted in collaboration between a private company, the doctoral candidate and a university which certifies that the thesis meets PhD standards. The project must have significant commercial potential for the company, and it is essential that the project has been designed to support or enhance short- or long-term business interests.

The design and methods to answer the research question are based on a qualitative approach and a critical realism paradigm. The research design consists of the following steps. First, a case study in two Danish municipalities has been conducted where it was investigated how they translate the audit principles into practice. Then, document analysis of two OHS management systems standards has been undertaken in order to understand the mechanism by which they work, and particularly in relation to psychosocial risks. Thereafter, an analysis was made of the characteristics of psychosocial risks as part of the understanding of why it is difficult to include the psychosocial risks in OHS management systems auditing. The case study and the two analyses formed the foundation for the development of an audit concept. This concept is grounded in the standard "Guidance on the management of psychosocial risks in the workplace" (PAS 1010) which is a supplement to OHSAS 18001 but expands on the specific needs for managing psychosocial risks, realistic evaluation perspective, and qualitative interviews as the main methods for gathering relevant and legitimate audit evidence.

As mentioned above, the empirical basis has been two Danish municipalities which have been certified for some years. To ensure an insight into how the OHS certified management systems worked in practice, the main activities were followed over a period of approximately two years. In this context, in particular, the internal and external audits were observed and documented. In addition, qualitative interviews were conducted and relevant materials collected. My PhD project has been an integral part of the Danish research project on certified OHS management systems and psychosocial working environment (CERPA). Therefore, the empirical data gathered from this project forms part of my empirical data. The aim of the CERPA project has been to study how certified OHS

management systems, originally developed for industrial organizations and focused primarily on workplace safety, can be extended to create an improved psychosocial working environment in municipal organizations. The CERPA project is within the Center for research in working environment efforts and means (CAVI). CAVI is a research center with several participating institutions, and the main focus has been to establish and explore the nexus between mechanisms and means in relation to working environment efforts in Denmark (cavinet.dk).

With regard to the theoretical background, the dissertation draws on theories and concepts of the content and nature of psychosocial risks and psychosocial working environment. In recognizing the particularities of psychosocial risk factors we use the concept “wicked problems” or complex problems to provide a better understanding of the challenges involved in regulating psychosocial risks. To develop the audit concept we used evaluation theories with a special focus on realistic evaluation. This evaluation perspective has a scientific theoretical foundation in critical realism. Using the management principles mentioned in PAS 1010 in combination with realistic evaluation principles and qualitative interviews provides a suitable method to audit the implementation and effectiveness of psychosocial risk management interventions.

1.1 Content and structure of the dissertation

The dissertation is divided into nine chapters, including this introduction. Chapter 2 describes the regulation of the psychosocial working environment in Denmark. The focus is on regulation through authority inspection and audit and the challenges associated with this. In chapter 3, I first characterize management systems standards as organization recipes and the challenges with translating and implementing the management principles in these standards. Following this, I explore the management approach in the standards OHSAS 18001 and PAS 1010. Chapter 4 outlines the audit principles and audit process with a focus upon the concept “evidence-based approach” that is the key principle in auditing. I addition, I highlight some important factors that may limit effective implementation and effects of OHS management systems audit. In chapter 5, I discuss the theoretical background for my dissertation. The first part of the chapter is a discussion of the concept; following this, the major theories, the job demands-control model and the effort-reward imbalance model on psychosocial factors at work are described. These models are the theoretical background for regulation of psychosocial risks in Denmark, and therefore emphasized. Thereafter, I characterize theories about different problems or risks and correspondingly different types of interventions. This is followed by a review of drivers and barriers for implementing interventions based on the risk management. Finally, in this chapter I examine the realistic evaluation paradigm and then compare it with classic effect evaluation. Chapter 6 gives a description of the design and methods. Firstly, I explain the critical realism paradigm my dissertation is based upon and then describe the research design and methods for data collection in the four studies of my dissertation. In chapter 7, I present a summary of the main results of the four studies, and in chapter 8, I discuss the results. Finally, chapter 9 presents the conclusions and implications of my research.

2. Regulation of the psychosocial working environment in Denmark

The regulation of psychosocial working environment constitutes the society's attempts from outside to influence the enterprises' own efforts to improve health and safety. In this chapter, I examine the regulation of the psychosocial working environment in a national perspective. First, the legal basis that regulates the psychosocial working environment is outlined. Next, workplace inspection of the psychosocial work environment is described with a focus upon areas for inspection by the working environment authority and methods to carry out psychosocial working environment inspections in practice. Finally, regulation of psychosocial working environment through certification and audits is presented, as certification of OHS managements systems can be regarded as a concrete instrument in the regulation of psychosocial working environment in Denmark. Overall, the chapter contributes to providing an insight into various types of external instruments to be used to regulate the working environment efforts and the psychosocial working environment at Danish workplaces.

2.1 Basis for regulation of the psychosocial working environment

The legal framework that regulates the psychosocial working environment in Denmark is covered by the legal paradigm *the working environment law* (Nisbeth, 2014). In the following, the Working Environment Act and the role of workplace inspection of psychosocial working environment is described.

The psychosocial working environment has been covered by working environment legislation in Denmark for many decades. The Working Environment Act was drawn up in 1975 and came into force on January 1 1977. This was the first time that the psychosocial working environment had been covered by working environment legislation. The Act was based on a broad understanding of health and safety, and the objective was to ensure a safe and healthy working environment for employees. In 2013, the Act specified that it is to cover both the physical and the psychological working environments in an equal manner (Hansen et al, 2015). The Danish Working Environment Act is a framework Act, which lays down the general objectives and requirements in relation to the working environment. Overall, the Act states that "the work shall be planned, organized and performed in such a way as to ensure health and safety" (Arbejdsmiljøloven, § 38).

The overarching legislation governing all aspects of OHS in Denmark is the EU Framework Directive 89/391 EEC on Safety and Health on Workers at Work. This framework presents the basic legal requirements to be met by national legislation in the member states of the European Community. The framework specifies employers' general obligations to ensure workers' health and safety in every aspect related to work 'addressing all types of risk' on the basis of the principles of prevention. The method to be adopted by the enterprises to prevent and control workplace risks should be a participative approach to conduct risk assessment of workplace hazards and then risk reduction (European Commission, 2014). Thus, Danish enterprises, through a risk management approach, impose systematic working environment efforts.

In most areas, there is a relatively detailed working environment regulation in Denmark, but as regards the psychosocial area, the working environment regulations are more vague and elastic,

primarily because of the psychosocial working environment characteristics. The psychosocial working environment has a number of characteristics that differ significantly from the problems known in the physical working environment (Hasle & Sørensen, 2011; Navrbjerg & Felbo-Kolding, 2014). While the physical working environment is roughly regulated by working environment standards because physical risk factors are typically directly observable and verifiable, the more complex psychosocial working environment issues are harder to regulate by means of standards because these issues are typically not directly observable and objectively measurable. Furthermore, most psychosocial issues traditionally belong under the employers' prerogative and the Cooperation System (Jespersen et al, 2016b; Hasle et al, 2003). Thus, overall the psychosocial working environment falls within a different regulatory space than the physical working environment. The challenging character of the psychosocial working environment has implications for the regulation of the psychosocial working environment through working environment authority inspection.

2.2 Regulation of the psychosocial working environment through authority inspection

The following paragraphs describe how authority inspection is carried out in a Danish context. The aspects in focus are the inspection approach, theoretical background for inspection, areas for inspection, prerogative enforcement, methods and tools, and how inspectors are trained to carry out the inspections. The description of these aspects of inspection is principally based on the analysis report "Psychosocial working environment – workplace inspection of the psychosocial working environment in the Nordic countries" coauthored by representatives from all five Nordic Labor inspectorates (Hansen et al, 2015). It is, however, only the Danish system that is outlined here.

The psychosocial working environment is included in all authorities' basic inspection, and the authorities have a risk-based approach to the psychosocial working environment. It is the potentially negative impact of the working environment that is of interest to the authorities because it is their job to ensure that the enterprises are complying with the legislation and thereby preventing illness and injuries arising from exposures and conditions in the working environment. The national working environment authorities therefore highlight conditions in the psychosocial working environment (risk factors) which national and international research indicates may pose a health or safety risk to employees (Hansen et al, 2015). In chapter 5 of this thesis, psychosocial hazards and the theoretical background for psychosocial hazards are outlined in detail, thus hazards and their associated risk factors in the psychosocial working environment are not examined here.

2.2.1 Areas for inspection

The working environment authority inspects both the individual enterprise's psychosocial working environment and overall systematic working environment efforts to ensure a healthy and safe working environment. Inspectors for the psychosocial working environment assess whether work has been planned, organized and performed appropriately in terms of safety and health, and whether work poses a risk to the employees in terms of these, either in the short or long term. Not all factors or negative impacts in the psychosocial work environment are inspected by the authority. The risk factors subject to inspection are defined in a number of recommendations prepared by the social

partners and the Danish Ministry of Employment, including the Danish Working Environment Authority, in the so-called *Methods Committee*. This Methods Committee has therefore marked the Danish Working Environment Authority's role and limits of efforts in relation to regulation of the psychosocial working environment (Hansen et al, 2015).

The Methods Committee has divided risk factors in the psychosocial working environment into two groups: Group 1 comprises psychosocial factors which are linked to the working situation of the employees and the causes of the risk factors must be sought in working processes or methods, the products used or the psychosocial context in which work is performed. These risk factors include, among others, violence and threatening behavior, consequences of traumatic incidents, high workloads and time pressure, emotional demands, bullying, lone working, night and shift work. Group 2 encompasses the psychosocial risks which are a direct result of managerial decisions as well as the risk factors arising from situations outside the enterprise. This means that, even though the authority inspects the psychosocial working environment during the majority of inspections, in practice the authority only takes a non-compliant notice regarding the risk factors or negative impacts in the psychosocial working environment which are linked to group 1 – the job functions of the individual employees (Rasmussen et al, 2011; Starheim, 2012).

2.2.2 Methods to carry out psychosocial working environment inspection

For psychosocial working environment inspection within an enterprise, the inspectors collect data or information concerning the incidence of risk factors, preventive measures taken by the enterprise and work-related consequences of the risk factors. For this purpose, the authority has prepared 24 standardized guidance tools, each aimed at a specific sector or job type. They have a participatory approach and are based on primary prevention. However, elements of secondary and tertiary prevention also underpin the guidance tools. These are structured so as to enable coverage of the most important risk factors associated with work organization in the sector or job type. Including a number of questions relating to each risk factor, the inspector uses the guidance tools for gathering concrete and contextual evidence of whether the psychosocial risks are properly managed. The guidance tools are not a checklist but rather interview tools, and there are no fixed procedures for how inspectors should use them.

The authority uses four different methods when collecting data or information: group interviews, individual interviews, observations and questionnaires. The primary method used is qualitative group interviews with employees. The inspector also carries out qualitative interviews with the enterprises' OHS organization and management representatives. This method enables inspectors to access the local knowledge of the managers and employees and obtain their own descriptions and assessments of their specific working environment. Observations may support other information about the psychosocial working environment and are typically used to add to the data collection in connection with qualitative interviews. Questionnaires are suitable in situations such as in the case of conflicting data; however, questionnaires are not generally used, as this method is time-consuming. The authority may use data in the form of written documentation produced by the management, the OHS organization or other actors in the enterprise. This could be workplace risk assessment, employee satisfaction surveys, statistics about absenteeism due to sickness, statements of turnover,

working environment policies, registration of violence and threatening behavior, OHS accidents and near-miss accidents.

All inspectors participate in training related to inspection of the psychosocial working environment. The inspectors are trained by internal task forces in the use of the guidance tools, interview techniques, writing reaction options, as well as carrying out a specific assessment and evaluation of psychosocial risk factors. Moreover, the Danish National Research Centre for Working Environment annually presents inspectors with the latest research within subjects that relate to psychosocial working environment inspection (Hansen et al, 2015).

2.2.3 Challenges with regulation through authority inspection

Although inspection practices that seem to be a suitable and efficient way of regulating some psychosocial risks have been developed (Starheim & Rasmussen, 2014), there are still essential challenges from a national perspective. One challenge is to capture the more "invisible" psychosocial risk factors in psychosocial working environment inspection. "Invisible" factors can be understood as being not directly observable or directly "inspectable" risk factors. It is reported that violence and threats of violence followed by workload and time pressure dominate the non-compliant notices because they are more visible risk factors (Nielsen et al, 2010; Rasmussen et al, 2011; Starheim, 2012). Nielsen et al, (2010) question whether it is the most relevant areas of the psychosocial working environment that are the focus of regulation, as the Danish Working Environment Authority's reaction pattern does not work in complete accordance with the existing knowledge concerning the link between exposure to risk factors in the psychosocial working environment and sickness absence. In particular, the risk factors *lack of influence on own work* and *lack of social support from managers and colleagues* are not included, although it is documented that these risk factors have a strong correlation with sickness absence (ibid.). The exclusion of these risk factors in inspections appears to be related to the employer's prerogative. As psychosocial risks are closely related to organization and management of work, the management may not be so accommodating in regard to having inspectors interfering with their work organization. In Denmark, this is reflected in, among other aspects, the Methods Committee, who have decided the issues that inspectors are allowed to address. Therefore, the inspectors have to evaluate whether the psychosocial risks stem from the root cause either directly related to the work or resulting from management decisions or organizational relations (Rasmussen et al, 2011). These limitations have important implications, according to Busck (2014), who discusses why the regulation of the working environment is not so effective in Denmark. He claims that respect for the employer's prerogative has severe costs to the psychosocial working environment as the resistance of many employers to give employees more control on their own working conditions contributes to the rise in psychosocial risks and their effects at work.

The final challenge which is highlighted here is related to the inspector's competencies. Rasmussen et al, (2011) argue it can be a challenge to inspectors with educational or training backgrounds other than psychology to address psychosocial risks in inspection. Addressing psychosocial risks represents a shift in the activities and culture of inspectors; therefore, it is necessary to continuously qualify the inspectors by adequate training and mentoring based on research and experiences from practice. In

addition to mandatory systematic OHS management and government inspection as regulatory instruments of the psychosocial working environment, the regulation of the psychosocial working environment in Denmark takes place through market-based OHS management system standards and non-governmental inspection in the form of auditing. These regulatory instruments are discussed now.

2.4 Regulation of the psychosocial working environment through certification and audit

New forms of market-based voluntary regulation have appeared in the field of OHS regulation in Denmark. Enterprises in Denmark can obtain a recognized OHS certificate after OHSAS 18001 – a standard for management of OHS (Arbejdstilsynets bekendtgørelse nr. 1191 af 9. oktober 2013) and after the Danish Working Environment Authority's "Order on recognized OHS certificate obtained through the certification of enterprises' OHS management system" (Arbejdstilsynets bekendtgørelse nr. 1193 af 9. oktober 2013). When comparing the OHSAS 18001 standard with the executive order no. 1193, they are quite similar in both management approach and content. However, a difference is that, in the Danish version, there is a requirement that the enterprise also must work with the inclusive labor market and health promotion, and the majority of the Danish enterprises with a certificate are certified after the OHSAS 18001 management systems standard.

A certified OHS management system requires conformity to the minimum requirements of national OHS legislation. When a Danish enterprise wishes to obtain a certificate based on OHSAS 18001 there are some additional requirements the enterprise must meet if the enterprise wants to achieve an OHS certificate with a green crown smiley symbol. First, the enterprise must demonstrate that it does not have any health and safety risks which could lead to authority non-compliant notices within the areas of important OHS risks (Arbejdstilsynets bekendtgørelse nr. 1191 af 9. oktober 2013). The OHS risks are listed in an annex to the order and under the area *psychosocial risks* it is simply mentioned "the most important psychosocial strains/risks in the industry" (Bilag 1 – bilag til Arbejdstilsynets bekendtgørelse nr 1191 af 9. oktober 2013). The second requirement to achieve a green crown symbol is that the enterprise must ensure that the employees or their representatives must be involved in developing, implementing and evaluating the working environment policy as well as the risk assessment process. Thus, in principle, an enterprise in Denmark cannot obtain a green crown symbol before these added requirements are met.

Enterprises can obtain an OHS certificate after an accredited certification body has conducted an external audit of the enterprise's OHS management system. Certification of an OHS management system can expand the regulation field of psychosocial working environment compared with regulation through Danish authority inspection. The expansion is due to the fact that the external auditor has to include every important psychosocial risk in the audit. In other words, there are no strict limitations with respect to which type of psychosocial risk factors that must be regulated through certification audits. Therefore, in principle, every certification audit in Denmark should assess whether every enterprise addresses all the important psychosocial risks in its OHS management system - thereby also the risks closely related to the management prerogative - and whether any of these psychosocial risks could lead to an authority non-compliant notice.

A political decision in Denmark has formalized the interaction between OHS certification and OHS regulation by integrating OHS certification into the legislation (Hohnen et al, 2014). Enterprises with an OHS certificate with a green crown symbol are thus exempt from ordinary inspection by authorities. However, the Danish Working Environment Authority will always make inspections in the event of serious accidents, just as it will always assess whether inspection is required in the event of working environment complaints (Hansen et al, 2015). The certification system thus constitutes a parallel system, formally equivalent to authority inspection, and an OHS certificate, in principle, should comprise documentation that an acceptable physical as well as psychosocial working environment exists. However, in practice, there are challenges with regulation of the psychosocial working environment through certification. The kinds of challenge it creates are now elaborated.

2.4.1 Challenges with regulation of psychosocial working environment through certification and audit

One of the first studies of OHS management systems in the Nordic countries highlighted a number of challenges. The aim of the study was to investigate the interaction between OHS regulation and certification and the study concluded that psychosocial working environments were rarely included in the OHS auditing process. In general, auditors tended to focus on issues that were relatively easy to observe directly. The project recommended that auditing should include all aspects of an organization's working environment, including areas that were less immediately visible and measurable, such as the psychosocial working environment. However, it would rarely be possible to assess an organization's psychosocial working environment through an ordinary audit, as this kind of assessment would require both more time and different methods in comparison to ordinary audits (Hendriksen, 2010).

Another study derived from a research project, CERVA that ran over several years, studied how certified OHS management systems worked in industrial enterprises in Denmark. Within this context, the project questioned the degree to which certified OHS management systems could also include the 'softer' issues that characterize the psychosocial working environment. The project found that the OHS management systems typically focused on accidents and safety and directly measureable areas of working environment were emphasized. As a consequence, psychosocial working environment issues were excluded in certified OHS management systems because these systems were unable to handle the soft, subjective and social issues that form the core of the psychosocial working environment (Rocha & Hohnen, 2010; Hohnen & Hasle, 2011).

The challenges with regulating the psychosocial working environment through certification and audit have, in the last few years, also gained political attention. In 2011, the Danish Confederation of Trade Unions (LO) published a report on working environment certification. This report concluded that auditors did not have adequate skills to assess the psychosocial working environment and that their qualifications tended to steer them to focus exclusively on the physical working environment. The report recommended that auditors should have the competencies to assess whether the psychosocial working environment issues of an organization constituted compliance or non-compliance of OHS regulations and whether the organization's risk assessment and action plan were of a sufficient quality. An obvious requirement for the certification of organizations, LO emphasized, was that auditors, as a minimum, should have skills and knowledge at approximately the same level

as labor inspectors. In this regard, LO recommended that certification organizations use the guidance tools developed by the Working Environment Authority in Denmark, to assess the psychosocial working environment (LO, 2011).

In 2015, the Office of the Auditor General (Rigsrevisionen) formally raised in a report whether a certified OHS management system does, in fact, constitute documentation for an acceptable psychosocial working environment. The report observes that there has not been sufficient monitoring of whether OHS management certification procedures are adequate regarding to identification of psychosocial risks, and queries whether the OHS management certification contributes to providing an acceptable psychosocial working environment (Rigsrevisionen, 2015). Again in 2015, a broad political agreement was adopted for working environment efforts up to 2020. Different initiatives have been taken to support the strategy and one such concerns better control of OHS certifications. It has therefore been decided to carry out an examination on whether there is a need to strengthen the quality of certification and auditing at enterprises, and how it can then take place. For example, whether a greater guarantee for auditors to have the necessary qualifications, the necessary sector knowledge, and knowledge about working conditions in the individual sector can be created (Beskæftigelsesministeriet, 2015).

The Working Environment Council (Arbejdsmiljørådet), which is one of the important actors in the field of regulation working environment (Rasmussen et al, 2011), is involved in the work of finding solutions for better control of OHS certification. The Council suggests, with respect to the psychosocial working environment, that the rules on recognized health and safety certificate with a green crown symbol must be extended so that recognition is subject to certification is carried out by auditors who have completed a special certification education in psychosocial working environment. This education must ensure the auditors' competencies to audit psychosocial working environment, to identify psychosocial risk factors as well as positive factors, assess the quality of the risk assessment and intervention process, and conduct and report from qualitative interviews. Furthermore, the Council suggests that concrete guidelines for the way the psychosocial must be addressed in relation to certified OHS management must be developed. The guidance must describe how prevention of psychosocial risks can be included in the OHS management system and how the psychosocial working environment can be internally and externally audited. These proposals to strengthen OHS certification in Denmark were adopted by the Danish Parliament in November 2016 (Beskæftigelsesministeriet, 2016).

To sum up, certified management systems tend to have difficulties in adequately addressing psychosocial working environment issues at work, and the psychosocial working environment is not typically included in certified OHS management systems auditing. In order to solve this problem it is necessary to develop valid and reliable audit methods and specific auditor competencies. The majority of certified management systems in Denmark are based on the OHSAS 18001 standard. In the next chapter, I examine the management approach, content and knowledge base of this management systems standard.

3. Occupational health and safety management system standards

OHS management systems standards have similarities with other management systems standards such as the approach of management and the knowledge base (Hohnen et al, 2014). Management systems standards are based on technical and rational knowledge that has been transformed into rules which are abstract and general. Regulation is treated as a technical matter, as these standards are built on rules regarding mono-causal technical solutions (Brunsson & Jacobsson, 2000; Brunsson et al, 2012). The purpose of management system standards is to make organizational practices visible and amenable to control or audit (Power, 1996, 1997).

Management system standards are a type of administrative standard; as such, they apply to the design and management of organizations. The principles for managing organization in management systems standards are universal and the standards do not indicate how these principles are to be adopted and implemented in practice (Furusten, 2000). Røvik (2007) describes management systems standards as an organizational recipe or a concept for how management ought to be performed in practice if an expected effect is to be achieved. This organizational recipe has an instrumental perspective and is prepared as a tool for management and efficiency. Because an organizational recipe is understood as an abstract, decontextualized and elastic concept, it has to be translated and implemented into the local practice, or in other words, the recipe has to be contextualized (Røvik, 2007).

In this chapter, I first give the significant characteristics of management system standards understood as an organizational recipe. Following this, the challenges that arise when this kind of management concept is translated and implemented into practice are discussed. At the end of the chapter, I examine two specific management system standards: OHSAS 18001, the most widely used standard for OHS management, is firstly examined, and then the new standard PAS 1010, which is compatible with OHSAS 18001, but specifically focuses on psychosocial risk management. Finally, I compare these two standards in relation to the understanding of organization, management, evidence and knowledge base.

3.1 Management system standards as organizational recipes

Management system standards are concepts that offer a diagnosis of current and future challenges linked to solutions (Kamp et al, 2005). When managers choose a management concept, they thus subscribe to certain ideas and conceptions regarding the world's nature, the organization and the actors who work in the organization (Furusten, 2000). Management system standards are noted by Røvik (2007) to have the following general features:

- The concepts are presented in an optimistic manner as they are recipes for how the enterprises achieve success
- Management concepts are universal and decontextualized; clear causal relationships that work in the same way in every organization all over the world

- Organization is understood as a close system; there is a very high degree of predictability and controllability, i.e. there is reasonable certainty about ends and means or causality
- There is harmony in the organization: power and conflicting interests in the organization are neglected
- There is a focus on management rather than leadership; focus is on goals, formal aspects, hierarchical instruments, procedures, control, and effects
- Universal principles and tools that often appear as simple and relatively easy to implement
- Implementation is done rationally and according to the plan; management implements the concept by "following the recipe."
- The management can expect quick results, requiring the implementation is carried out in the prescribed ways and according to rational principles (ibid.).

To summarize, the concept “organizational recipe” defined by Røvik (2007) can be used to analyze the management approach to the management system standards. Management system standards are driven by the notion that it is possible - even for complex interventions - to define clear causal relationships between intervention and effect that applies worldwide. The approach to organization and management is technical rational (Nielsen, 2000; Furusten, 2000; Kamp & Le Blansch, 2000; Kamp et al 2005; Borial, 2012), and articulated in the following way: There is a top-down focus; management is the starting point, and the emphasis is on how management can develop and change the organization. The focus is on formalized structures and the management implements the concept of, so to speak, following the recipe. Rational models that divide the processes into manageable phases that follow one after another are used. This is integrated in the management concept of how the processes are carried out; it connects the problem and solution, and provides a plan for how to get from A to B. Management first defines the objectives the organization wants to achieve, and then it is planned how these objectives are to be achieved. Thereafter, the plan is implemented, and finally the results are evaluated in relation to the objectives that were set up. Thus, it is a logical sequence in which one phase is a prerequisite for the other (Borum, 2013; Dahler-Larsen, 2012; Røvik, 2007; Kamp et al, 2005; Scott, 1998).

Furusten (2000) has performed a similar analysis of the management systems standards. He uses the ISO 9000 series of ‘quality’ standards as an empirical example for discussing perspectives on organization and management. The standard’s approach to organization and management is one where the organization is considered a tool that can be reshaped to conform to a specific standard-based model. As such, the standard is based on certain assumptions about what makes an efficient organization: the organization is regarded as separate from its environment; it is ‘manageable’; and it is capable of setting measurable goals. The organization should also be differentiated into various clearly defined processes, with management exercising control and the ongoing documentation of each process. Management and control are treated as synonymous. After implementation of the standard, the results can be evaluated in a procedure known as the audit. If the audit shows that the standard has generally been met, it will be assumed that efficiency, and thus quality, are high. Fulfillment of standards is an indicator of efficiency and performance (ibid.).

3.1.2 Translation and implementation of management principles of the organizational recipes

Røvik (2007) points out that the abstract ideas communicated by organizational recipes have to be translated into the organizational context. Therefore, a translation takes place when the principles of management, described in the management system standards, are going to be adopted and implemented in practice. This important point is also noted by Furusten (2000) who emphasizes that the management system standards stress that 'principles and requirements are what is standardized', while implementation remains 'unique to each situation'. Principles are universal, while implementation is local or case-by-case. The standard thus restricts itself to 'what' has to be done, but not 'how' it should be achieved. Thus, the standard tells every organization to follow the abstract and general rule, while at the same time leaving it free to do so in its own way (Furusten, 2000:74). As the management principles in organizational recipes are abstract and general, they are necessarily going to be translated into the organization's local practice, which provides significant opportunities for local interpretation and adaptation (Røvik, 2007). These management principles are translated into the organization's reality in a complex interaction between actors and context. Translator and implementation competencies, Røvik stresses (2007), thus become critical success factors in transforming management principles into practice.

The perspective on organization and management which is expressed in the organizational recipes reflects little of the recent academic thinking on organization and management (Furusten, 2000; Dahler-Larsen, 2012). Rather than academic research, the management system standard is strongly influenced by the perception of popular management thinking regarding what constitutes an ideal for management of organizations. Several scholars have challenged the rational understanding of organizations and management as reflected in the organizational recipes (March, 1995; Morgan, 1997; Hatch 1997; Scott, 1998; Furusten, 2000; Weick, 2001; Kamp 2005; Røvik, 2007; Borial 2012; Dahler-Larsen, 2012; Borum 2013;). These academics are critical of the rational approach in which an organization defined as a machine via a functionally designed structure transforms inputs into outputs. It is, however, questioned whether the organization can be managed efficiently by providing clear objectives, certain plans and linear processes. These researchers also argue that the processes are not orderly implementations of objectives and plans. In practice, processes are complex and difficult to predict. Organizations are not stable systems or structures but rather social dynamic systems; therefore, the processes are uncertain and less controllable. Finally, because the organizations are not necessarily harmonious, these processes may be conflictive.

3.2 OHS management system standards

The organizational recipe perspective on OHS management system standards can help us to understand how these standards work in practice. After a short description of the historical background for OHS management system standards, I use the concept for the description of the perspective of organization and management in these standards. Voluntary and market-based OHS management systems generally take the form of management system standards that specify requirements for certification through external auditing. OHS management systems in the form of standards represent a relatively new phenomenon. Occupational health and safety management began as part of the pre-World War II 'safety movement'. Later on, systems were developed into

extensive management systems, such as Du Pont's safety management systems. In recent decades, these systems have evolved into certified management systems, and the structure of the management system that forms the basis of ISO 9001 – the quality management systems standard – reappear in OHS management system standards (Frick & Wren, 2000).

There are two main types of standards: specifications and guidelines. Specifications give sets of requirement and are designed to allow for third party certification. Guidelines, in contrast, give recommendations and are not developed for certification purposes (Zwetsloot, 2000). First, I examine the OHSAS 18001 standard which is a specification standard. This will be followed by PAS 1010, which takes the form of guidance and recommendations. Finally, I compare the two standards focusing on similarities and differences between them.

3.2.1 The management approach in OHSAS 18001

The British OHS management system standard OHSAS 18001 has gained considerable worldwide acceptance over the years. It was issued in 1999 and has, in practice, become a kind of international standard (Fernandes-Muniz et al, 2012). Voluntary OHS management system standards are complex and formalized in terms of specifications and documentation and they specify that the organization must comply with the national OHS regulation and legislation (Frick & Wren, 2000).

The regulation of OHS risks in the OHSAS standard is founded on the risk management paradigm that has a systematic, evidence-based approach (OHSAS 18001, 2008). The risk management approach is, in principle, the concept of a control cycle: identification of hazards; assessment of risks; design and implementation of intervention; and evaluation (Leka, Cox & Zwetsloot, 2008). Leka & Cox (2010) describe the risk management process as cyclical in nature or as a vehicle for continuous improvement in OHS. The risk management process starts with the identification of hazards or problems and an assessment of the risks they pose; it then uses this information to suggest ways of reducing that risk at source. The risk assessment brings together two elements to allow the identification of likely risk factors. First, it requires the identification of OHS hazards. Second, information about the possible harm associated with OHS hazards is collected. Bringing together the information on OHS hazards and their possible health effects allows the identification of likely risk factors (Leka & Cox, 2010).

The OHSAS standard claims to deal with all kinds of OHS risk, and to manage all aspects of the working environment (Hohnen et al, 2014). The standard specifies requirements for an OHS management system that should enable an organization to develop objectives and to achieve those objectives by controlling all its OHS risks (Robson et al, 2007). Continuous improvement based on measurable objectives and performance is a requirement for the standard (OHSAS 18001, 2008). The management system consists of interrelated elements used to develop and implement an organization's OHS policy and manage its OHS risks. Such elements include organizational and responsibility structures, the setting of objectives, hazard identification, risk assessment, risk reduction, procedures, processes, and resources (Redinger & Levine, 1998).

The management principles in the standard are defined at the conceptual level, and they could also be termed 'auditable clauses'. The principles of OHS management are based on the concept known as Plan-Do-Check-Act, which is a problem-solving strategy. The concept comes from the quality management systems in which the International Standardization Organization (ISO) has issued the well-known standards for quality management and environmental management. How management of OHS ought to be conducted in practice contains the following processes:

- Plan: establish the objectives and processes necessary to deliver results in accordance with the organization's OHS policy;
- Do: implement the processes;
- Check: monitor and measure processes against OHS policy, objectives, legal and other requirements and report the results;
- Act: take actions to continually improve OHS performance (OHSAS 18002, 2009).

OHS risks can be categorized as linear or simple, complex, uncertain, and ambiguous risks, which correspondingly require different risk management approaches dependent on the characteristics of the risk (Renn, 2008). The management concept in the standards provides a clear causal relationship between exposure to a risk factor and the health impact and between the action and the preventive effect. These principles thus set the stage for a mono-causal risk management approach that fits very well with management or control of accident risks and risk factors in the physical working environment (Hohnen et al, 2014; Hasle et al, 2016). However, the OHSAS standard does not explicitly distinguish between different types of OHS risks and what implications it may have for managing different types of risks (Jespersen et al, 2016b).

Within the research, some important issues have emerged that impact upon the implementation of OHS management systems. An important issue that has been the subject of considerable debate is the main focus on safety in the OHSAS 18001 standard. As mentioned above, the OHS management system standards have their historical roots in the safety movement tradition, in which health played a limited role. Hence, even though the OHSAS standard claims to manage both health and safety, in practice it deals much more with accident risks than with health risks (Frick, 2011; Hasle & Zwetsloot, 2011; Hohnen & Hasle, 2011). The guidelines for implementation of the OHSAS standard rarely provide, if at all, examples of managing health risks, nor do they comment on the complexity of assessing and handling risks for work-related ill health. Thus, the explanations and examples of how OHSAS should be implemented tend to be limited to safety issues aimed at preventing accidents (Frick & Kempa, 2011; Hohnen et al, 2014).

To conclude, the OHSAS standard can be described as an organizational recipe that has to be translated into the complex organizational practice. This translation has significant challenges because of the approach to organization and management. The management perspective in the OHSAS standard is based on the PDCA concept that has clear causal relationships and relies on a generally stable organizational view (Hale & Hovden, 1998). The standard has an understanding of risks as measureable, decontextualized and mono-causal. This means that these risks are conceptualized in such a way that they can be observed, assessed and managed in an objective and

technical manner (Hohnen et al, 2014; Leka et al, 2011). The knowledge base of the standard is technical, safety issues and technical solutions are prioritized, and the command-control approach of regulation tends to dominate the discourse in voluntary OHS management systems (Frick & Kempa, 2011). The consequence is that more complex working environment issues with unclear causal relationships may be neglected (Hohnen et al, 2014).

3.2.2 PAS 1010 - Guidance for management of psychosocial risks

In recognizing the challenges with management of psychosocial risks with the principles set in OHSAS 18001, two new management standards have been developed in order to tackle the shortcomings in OHSAS by specifically addressing psychosocial risks (Leka et al, 2011). The first standard "Guidance on the management of psychosocial risks in the workplace" PAS 1010 (British Standard Institute (BSI), 2011) was published in 2011 and was followed in 2013 by a similar Canadian standard (Canadian Standard Association & Bureau de normalization du Quebec, 2013). In the following, I compare OHSAS 18001 with PAS 1010 and this analysis will focus on similarities and differences with respect to the approach on organization, management, knowledge base and evidence.

It is reported that the PAS 1010 standard for psychosocial risk management is compatible with the OHSAS 18001 standard. Both standards are based on the PDCA approach, but PAS 1010 expands on the specific needs for managing psychosocial risks (BSI, 2011). PAS 1010, which is rooted in the "European Framework for Psychosocial Risk Management" (Leka & Cox, 2008), provides an overview of the most common psychosocial risk factors in order to clarify that it is all such risk factors that must be controlled in a psychosocial risk management system (BSI, 2011). The psychosocial risk management process is described in detail and key principles of psychosocial risk management are listed. As with the management of other OHS risks, psychosocial risk management is a systematic process based on the principles of prevention. The standard also includes informative annexes, drawing on prevailing scholarly knowledge, about the management of work-related stress and harassment, bullying and third party violence (BSI, 2011).

Comparing the organizational view in PAS 1010 with OHSAS, the psychosocial risk management paradigm in PAS 1010 is defined as having a dynamic organizational view in contrast to the traditional management paradigm in OHSAS, which is founded on a more stable organizational view (I-WHO, 2008). Moreover, the characteristics of risks differ in the two standards. Both the domain of psychosocial working environment and the management of psychosocial risks are acknowledged to have a qualitatively different nature than the more traditional OHS risks (Hohnen et al, 2014). In PAS 1010, psychosocial risks are characterized as context-specific, have many causes, and are not amenable to quick-fix solutions. Since it is necessary to understand the specific context in order to assess psychosocial hazards, they cannot be managed in an objective and technical manner (Leka et al, 2011; BSI, 2011). With regard to the understanding of the scope of OHS risks, PAS 1010 has a broader understanding of OHS risks, as they also include work organization and management as risk factors, hence touching on the management's prerogative, something not addressed by OHSAS 18001 (Hohnen et al, 2014).

PAS 1010 includes a more contextual and participative approach than OHSAS 18001. Key principles of psychosocial risk management are employee and management commitment and an explicitly participative approach. It is expressed in PAS 1010 that psychosocial risk management is closely related to how work is organized and managed. As a consequence, the main actors are always managers and employees, and employees should actively participate in the risk assessment and risk reduction processes. This involvement by the employees means that the employees' expertise with regard their own work counts as reliable and valid information (BSI, 2011). The crucial point that managers' and employees' local knowledge counts as valid evidence seems to have implications for the risk management approach (Hohnen et al, 2014). Both the OHSAS 18001 and PAS 1010 standards require methods and knowledge based on evidence when managing risks. In PAS 1010, the psychosocial risk management process is defined as a systematic evidence-informed, practical problem-solving strategy (BSI, 2011; Leka & Cox, 2010). Thus, the definition of psychosocial risk management differs from the definition of traditional OHS risk management, which is defined as an evidence-based problem solving strategy (Leka & Cox, 2010). However, Leka & Cox (2010) do not clearly explain the difference between an evidence-based and an evidence-informed paradigm.

The difference in the management paradigm between OHSAS 18001 and PAS 1010 may be reflected in the knowledge base of the two standards. With respect to the knowledge base in these two standards, the management of risks is based on different kinds of knowledge base. The OHSAS standard works with decontextualized knowledge and perceive OHS risks as mono-causal, "technical" and "measureable". PAS 1010, in contrast, attempts to address psychosocial risks as complex, unclear cause-and-effect relationships, contextualized and subjective forms of knowledge (Hohnen et al, 2014). However, the difference between these two different paradigms when they are translated into practical models for reducing risks is not clear, nor it is specified what implications this different terminology has for evaluating compliance and performance (Hohnen et al, 2014). In conclusion, despite these shortcomings in PAS 1010, the key principles of psychosocial risk management can form a useful basis for the development of an appropriate methodology for auditing psychosocial risks in certified OHS management systems. While there are prospects that PAS 1010 will help improve the management of psychosocial risks, empirical research on the implementations and evaluations of PAS 1010 is currently lacking.

The OHS management system developed by an organization is subject to internal and external audits for certification (OHSAS 18002, 2009). In this way, the OHS management system audit can be seen as a tool for regulation. Auditing, as a regulatory instrument, is the focus of the next section.

4. Audit of certified occupational health and safety management systems

Auditing is a basic component in OHS management system standards. As a crucial part of the OHS management system, auditing can be understood as both a management tool and a control system (Power, 1997) and it must, in principle, be an effective management tool for controlling those risks that are most important in ensuring a safe and healthy workplace (Blewett & O'Keffe, 2011). Auditing is a form of evaluation (Dahler-Larsen, 2012) and the purpose of an audit is to objectively evaluate the organization's OHS management system. The auditor shall determine whether the OHS management system conforms to the requirements of the OHSAS standard, including the requirements of compliance with national OHS legislation, whether it has been correctly implemented, and whether it has been effective in executing the organization's policy and fulfilling its objectives (OHSAS 18002, 2009). The ISO 19011 standard provides the general principles and methodology for auditing management systems and also describes the competencies needed by an auditor (ISO 19011, 2011). These principles and methodology are recommended by OHSAS 18001.

In this chapter, I first outline the audit principles with a specific focus on the principle of *evidence-based approach*. Following this, I describe the audit process including collecting and verifying information, methods of collecting information, and the assessment and reporting of audit findings. Finally, I discuss some key factors that may challenge the implementation and effectiveness of the OHS management system audit. Overall, this chapter contributes to give a picture of audit as an instrument to regulate the working environment and the challenges this regulatory instrument may entail when it is implemented into practice.

4.1 Audit principles and audit process

According to the ISO 19011 standard, the process of an auditing management system is a *'systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled'* (ISO 19011, 2011:1). Auditing OHS management systems is based on the following six principles: integrity, fair presentation, due professional care, confidentiality, independence and evidence-based approach (ISO 19011, 2011). The last is a key principle in auditing as it lies at the heart of thinking about the operational dimensions of audit practice (Power, 1997). The evidence-based approach is defined as *'the rational method for reaching reliable and reproducible audit conclusions in a systematic audit process'* (ISO 19011, 2011:5). Audit evidence can be quantitative or qualitative but only information that is verifiable should be accepted as valid evidence (ISO 19011, 2011).

The audit process is the method for assessing an OHS management system, and ideally, the audit process is one where the auditor compares what should happen in principle with what happens in practice (Pain, 2010). In practice, the audit process and results are affected by many different issues, e.g. by the characteristics of the audit method, the auditor's workplace, the auditing program elements and the external environment e.g. legislation and regulations (Robson et al, 2012). The audit process includes document review, preparing the audit plan, conducting the audit, and preparing the audit report. Prior to conducting an audit, documents from the organization are reviewed, including results of prior audits. Information from this review should be used in making the

audit plans. The audit plan must include the objectives, criteria, methodology, and scope of the audit. Conducting an audit involves the process of collection and verifying information, and information relevant to the audit objectives, scope and criteria should be collected by appropriate methods. Collecting information and gathering evidence can take place through interviews, observations and reviews of documents, and generating audit findings is achieved by evaluating evidence against criteria. Findings can indicate conformity or nonconformity with criteria and identified nonconformities must be reported. The workplace has to take corrective actions to eliminate the cause of a detected nonconformity and the certification body must verify the effectiveness of the corrective actions taken (ISO 19011, 2011).

As with management system standards, the standard of auditing management systems is based on abstract and decontextualized principles which have to be translated and implemented into practices. In the following part, I explore some of the important challenges which organizations and auditors have experienced when adopting and implementing the general audit principles.

4.2 Implementation and effects of OHS management systems audit

Research in the implementation and effects of OHS management systems audit has grown in recent years (Hohnen & Hasle, 2016; Jespersen et al, 2016a; Robson et al, 2012; Borial, 2012; Gallagher & Underhill, 2012; Blewett & O'Keffe, 2011; Hohnen & Hasle, 2011; Zwetsloot et al, 2011; Gallagher et al, 2003, 2001; Frick et al, 2000). Gallagher et al. (2003, 2001) have identified inappropriate audits. Some of the main factors are weak senior management commitment and poor employee involvement, contextual barriers, e.g. implementation of OHS management systems are especially challenging, and inappropriate audit methods and tools (ibid.). Inappropriate audit methods particularly include excess paperwork, audits that are too predictable or routine, sole focus on tangible risks, and lack of auditor competencies. In the following, I explore these drivers and barriers in more detail.

Blewett & O'Keffe (2011) emphasize the importance of involving employees in auditing. Employee participation should be reflected in the audit methodology. Employees have a role to play in all stages of an audit, and the auditor needs to talk independently to both managers and employees. In practice, however, auditors have experienced that involvement of employees is, for various reasons, often circumvented (ibid.). Another import factor inhibiting the effectiveness of audits is 'red tape'. Being formalized in terms of specifications and documentation, there is a danger that OHS management systems become 'paper tigers' focusing on bureaucratic compliance as ritual, rather than as a means of genuinely improving workplace health and safety (Frick et al, 2000; Gallagher et al, 2003; Borial, 2012). Research reports that auditors tend to place significantly more focus on documentation than on the identification of OHS risks and how to manage them. Documents are often prepared for the impending audit rather than to guide operational activities or meet organizational needs (Power, 1996, 1997). Thus, paperwork required by the standard was primarily intended to meet auditor requirements rather than organizational needs (Blewett & O'Keffe, 2011; Borial, 2011). The focus on paperwork in audits is also reported by Zwetsloot et al (2011). In some cases, they noticed a tendency to concentrate on paperwork rather than practice, and there was a strong tendency towards routinization of the auditing and its reduction to a set of checklists with

tick-boxes. Audits thus became too predictable and lost any impact (Zwetsloot et al, 2011). This issue of excessive focus on paperwork is also supported by Borial (2012), who has studied the process of preparing for and passing an ISO certification audit. Borial (2012) claims auditing is akin to passing a quite predictable exam, and the ceremonial aspects of audits are generally encouraged by the procedure-oriented nature of auditor verifications. The audits focused mainly on paperwork, and the auditors used checklists and relatively standardized questions. Auditors also predominately looked at the procedural side, to check if the paperwork was done correctly, because they lacked time. Hence, it was difficult to verify anything other than written procedures. Approving the compliance of documentation with the standard was thus implicitly considered evidence of compliance of the organization's practice (ibid.). Conducted in this way, auditing becomes more like what Power (1997) termed a 'ritual of verification' rather than a method for the improvement of practices (Borial 2012; Blewett & O'Keffe, 2011).

The next important challenge of translating principles into practice is that audit methods tend to focus on tangible and visible risks to the exclusion of less visible matters to do with power and culture and more subtle long-term health risks (Gallagher et al., 2003; Frick & Kempa, 2011). The focus on primarily visible risks has implications for auditing of psychosocial risks. This may be the reason for the tendency to exclude psychosocial risks from audits (Hohnen & Hasle, 2011; Robson et al, 2012; Gallagher & Underhill, 2012). The exclusion of psychosocial risks from audits has been related to the way audits of the management system are carried out (Hasle & Zwetsloot, 2011). The character of psychosocial risks does not fit easily with the knowledge base in traditional audits. Audits are based on technical knowledge, mono-causal relationships and objectively identified problems or risks (Hohnen et al, 2014) which does not fit easily with psychosocial risks, where problems and solutions are often unclear, multi-causal, contextual, and difficult to observe directly (Hohnen & Hasle, 2011; Leka et al, 2011). The last category of factors that have affected the implementation and effectiveness of audits is a lack of auditor knowledge and skills, which touches on the general issue of auditor competencies (Jespersen et al, 2016a, 2016b; Power & Terziovski, 2007; Poksinska et al, 2006).

To conclude, auditing is founded on an evidence-based approach. The purpose of the audit must be to achieve valid and reliable evidence that can be used to improve the OHS management system and thus the working environment. Auditors have to judge the evidence objectively against pre-defined audit criteria in order to generate audit findings. Evidence is thus required as the basis for indicating conformities or nonconformities. The concept of evidence is not a clear concept, however, and both ISO 19011 and OHSAS 18001 have a somewhat open approach to the evidence concept, which has implications for implementation of audit principles and ultimately the effectiveness of audit as a regulatory instrument. In both standards, it is unclear on what paradigm the audit principles are based, i.e. it is not clear what counts as valid and reliable evidence and how it can be provided (Jespersen & Hasle, 2016c). Within the established audit discourse, auditors tend to understand audit evidence as directly observable and measurable issues which have implications for the effectiveness of regulating psychosocial risks through management systems audit (Hohnen & Hasle, 2016). Psychosocial risks are typically characterized as invisible and complex and these features may require an expansion of the understanding of *evidence-based approach*. In the next chapter, the content and nature of psychosocial risks are examined in more detail.

5. Theoretical background

The research-based understanding of the psychosocial working environment has evolved since the 1960s. At least seven major theories on psychosocial factors at work cover every important aspect of the psychosocial working environment and these theories have defined the requirements for job design and well-being (Kompier, 2003). This chapter provides the theoretical background for the key principles of psychosocial risk management as well as the development of a concept to improve auditing of psychosocial risk management in certified OHS management systems. First, the concept of the psychosocial working environment, including the concept psychosocial risk factors, is discussed. This conceptualization is subsequently used to discuss interventions in psychosocial working environment and the possibilities to evaluate such interventions.

5.1 The concept of psychosocial working environment

It is difficult to pin down and define the concept *psychosocial working environment* (Abrahamsson & Johansson, 2013). The difficulty is due to the concept's knowledge base that derives from numerous different scientific traditions, and there are many understandings of what the concept "psychosocial working environment" covers (Hvid et al, 2011; Abrahamsson & Johansson, 2013). Already by the 1970s, researchers - especially in Sweden - began to discuss what actually should be understood as the psychosocial working environment without any clarification having been found, and research has been characterized by politicization and strong interests in the field (Allvin & Aronsson, 2003). The concept of psychosocial working environment is customary in Scandinavia, and in Denmark in particular, and is used synonymously with the concept of psychological working environment, as a name for the part of the working environment that does not deal with the physical working environment (Limborg, 2002).

The concept of psychosocial working environment is thus constituted by different paradigms, one of which is the organizational risk management paradigm in which the focus is on reducing risk factors in the surrounding environment. This paradigm is reflected in the Danish Working Environment Act and market-based standards for health and safety management. In their report on workplace inspection of the psychosocial working environment in the Nordic countries, Hansen et al (2015) define psychosocial working environment as that part of the working environment which has to do with the nature and content of the work, the organization of the work, and the social relations and conditions under which the work is performed (ibid.). The concept is further clarified by Hansen et al (2015), who observe that: "The psychosocial working environment is the result of the interaction of factors pertaining to work and the people carrying out the work. This is a complex interaction, which is influenced by many factors. Thus, the psychosocial working environment is determined by the type of work being carried out; how this work is organized and planned; the qualifications required of the employees for performing the work; how they experience their work situation; and how they react in relation to this. Finally, the psychosocial working environment is embedded in a cultural and societal context" (Hansen et al, 2015:16). Outside the Nordic countries, the concept of psychosocial working environment is rarely present, and in the Anglo-Saxon language, the concepts "psychosocial hazard" and "psychosocial risk" are instead used (Agervold, 1998). The term "psychosocial hazard" refers to

the occurrences of events which individuals are exposed to which may threaten their health or well-being. Cox, Griffiths & Rial Gonzales (2000) have defined workplace psychosocial hazards "as those aspects of work design and the organization and management of work, and their social and organizational contexts, which have the potential for causing psychosocial, social or physical harm" (Cox, Griffiths & Rial Gonzales, 2000:14). The term "psychosocial risk" refers to the likelihood that psychosocial hazards can cause harm and have a negative impact on employees' health and safety (Leka et al, 2008).

Hvid et al (2011) argue that in addition to the organizational risk management paradigm, the concept of psychosocial working environment contains two other paradigms: 1) management and collaboration, where the concept of social capital of the organization has gained a central position in the understanding of the psychosocial working environment, and 2) individual approach, where stress is understood as a function of the individual cognitive appraisal of work, relations and organization. Thus, it is not the working conditions, but rather the cognitive orientation of some employees that creates problems. Because of the different paradigms, Hvid et al (2011) observe, scientific evidence cannot guide us in choosing the best approach and the choice therefore becomes basically political: should we change the work organization and technologies in use, should we change the social relations at work, or should we change the attitude of the individual? A relevant question that Hvid et al (2011) make in this context is whether the concept of the psychosocial working environment can contain such different approaches and still be regarded as a single concept.

Abrahamson & Johansson (2013) are two Nordic researchers who have also explored what the concept psychosocial working environment covers. As with Hvid et al (2011), they have divided the concept into three different perspectives, one of which being "problematization". This perspective deals with questioning, critical analyses, and complementary understandings of different phenomena within the psychosocial work environment, such as power, alienation, opposition, and inequality. Abrahamson & Johansson (2013) argue that the last perspective can contribute to an additional understanding of psychosocial work environment, namely, why it is so difficult to implement improvements to the psychosocial working environment, and why knowledge about what characterizes good psychosocial working environment is not utilized (ibid.).

In the developed concept of auditing psychosocial risks in certified OHS management systems, the concept of psychosocial risks is founded on the organizational risk management paradigm. This paradigm is appropriate because OHS management system standards and The Danish Working Environment Act are based on that paradigm. In managing psychosocial risks, however, it is also appropriate to explicitly involve the perspective of "problematization" because these risks are closely related to the management and organization of work, and thereby also to the power disparity in workplaces (Walters, 2011). In the following section, the theories of psychosocial working environment are described and the description is principally based on Kompier's (2003) examination of seven theoretical approaches that offer relevant information with respect to the requirements of well-designed psychosocial working environment (ibid.)

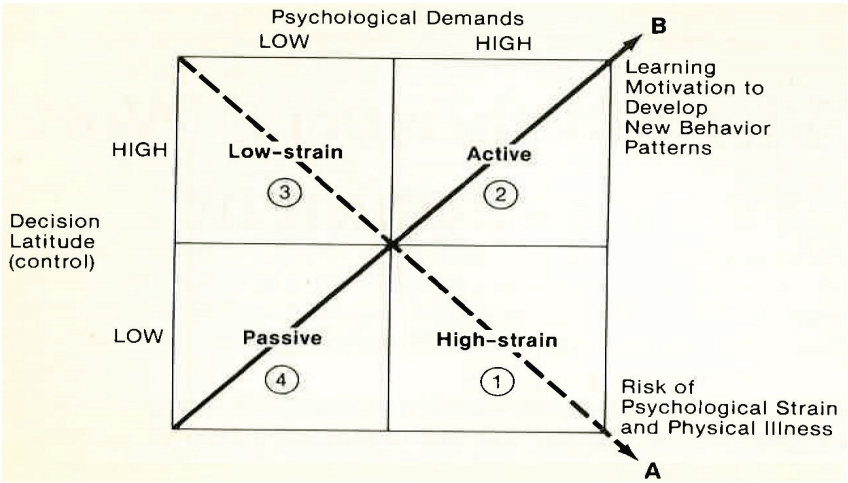
5.2 Major theories on psychosocial factors at work

Seven important theoretical approaches are characterized in order to find the factors that affect stress and psychological well-being (Kompier, 2003): 1) The job characteristics model; 2) The Michigan organization stress model; 3) The job demands-control model; 4) The sociotechnical approach; 5) The action-theoretical approach; 6) The effort-reward imbalance model, and 7) The vitamin model. In the following, the focus is on the job-demands control model (Karasek & Torell, 1990) along with the effort-reward model (Siegrist, 1996) because these theories have stimulated more empirical research than any other contemporary theory and they are dominant in the research of workplace psychosocial hazards (Cox & Griffiths, 2010; EU-OSHA, 2012a). In addition, these models are the theoretical background for regulation of psychosocial risk factors at work in the Danish context (Hansen et al, 2015; Rasmussen et al, 2011).

5.2.1 The Job Demands-Control Model

The job demand-control model was developed by Karasek (1979) and expanded by Karasek & Theorell (1990) and Karasek (1998). In occupational health psychology, the job demands-control model is currently the most influential stress model. The model builds upon criticisms of the Job Characteristics Model (Hackman & Oldham, 1976) and the Michigan Organization Stress Model's (French & Kahn, 1962) approaches (Kompier, 2003). The job demands-control model was an attempt to counter the individualistic tendencies in stress research, reflected in coping approaches, and instead connect stress with inappropriate work organization or organizational strains (Buch et al, 2009). Central in the model is the interaction between a particular set of work characteristics: job demands and job control. In its original format, the model defines two independent dimensions of stress risks: psychological demands and decision latitude. Decision latitude is also labelled as job control, which is a combination of task authority and skill discretion. The model is usually presented diagrammatically as a 2 x 2 matrix of 'low and high demands' against 'high and low control' (Karasek & Theorell, 1990:32).

Figure 1: Job demands-control model (Karaksek & Theorell, 1990:32)



The model describes four combinations of demands and control: a) High strain jobs: high demands with low control; b) Active jobs: high demands with high control; c) Low strain jobs: low demands with high control, and d) Passive jobs: low demands with low control.

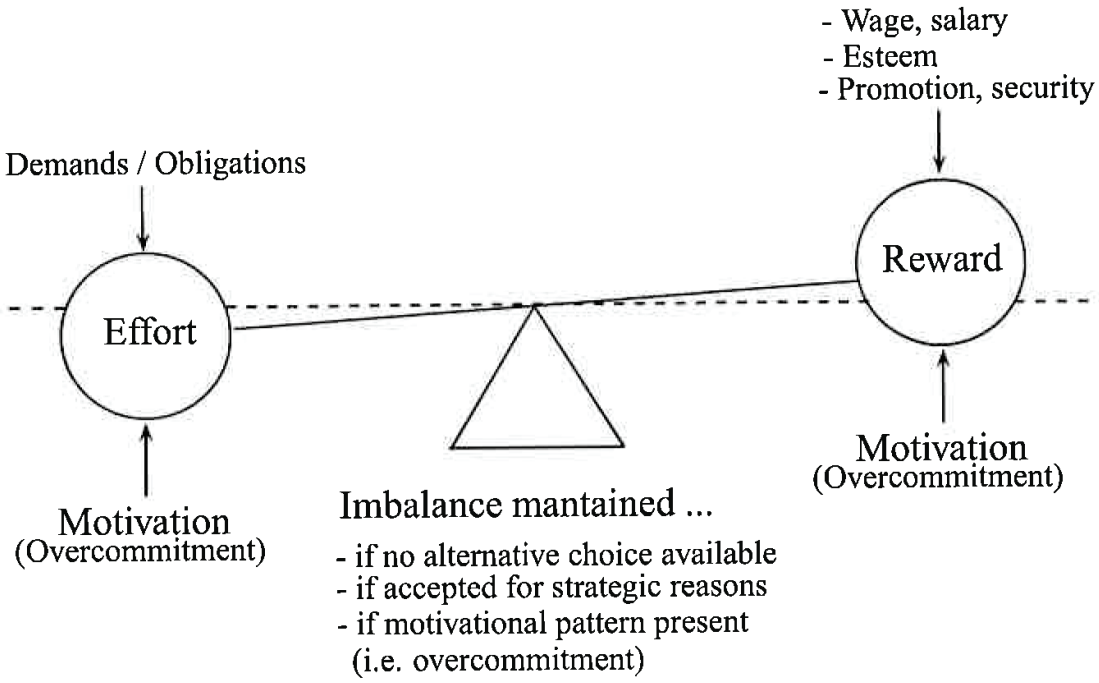
An attempt to broaden the scope of the theory has been made by Johnson & Hall (1988) who introduced a third factor: social support. This expanded version is also known as the demands-control-support model (Karasek, 1998). Despite criticism of the more person-based theories, Karasek (1998) acknowledges that person-based perceptions are an important part of the process by which environments affect individuals. He also acknowledges that there are long-term differences in personal responses to environments. Therefore, a "time-dynamic, integrated environment and person-based" version of the job demands-control model was also developed (ibid.).

Kompier (2003) concludes there is substantial empirical evidence for the job demands-control model, and the attraction of the model is primarily in its simplicity and its emphasis on structural characteristics of the working environment as "objective" determinants of stress (ibid.). The job demands-control model has been criticized both theoretically and methodologically, however, and the criticism is particularly pronounced in the studies of knowledge work (Buch et al, 2009; Hvid, 2011; Abrahamsson & Johansson, 2013). It is argued that this model has not been altogether simple to apply to modern working life. For example, it has been shown that work with a high degree of control can also cause ill health, despite the fact that the model suggests that this should constitute a positive situation from a health standpoint (Buch et al, 2009). Cox & Griffiths (2010) conclude from the ongoing critique of the job demands-control model that both demand and control are important determinants of health-related outcomes but the determinants may act independently rather than interactively, and the effects of the interaction between demand and control are modest and may be strongest in relation to cardiovascular health (Ibid.). Another widespread and influential model for understanding the relationship between the psychosocial working environment and the individual is Siegrist's efford-reward model (1996). This model is further elaborated in the following section.

5.2.2. The Effort-Reward Imbalance Model

The effort-reward model is based on an employee's own experience of the efforts they make and the rewards they receive. Siegrist (1996) argues that where the individual's perceptions of the rewards of working do not match their perceptions of the effort involved, then this imbalance can carry a risk to health and associated behaviors. In this regard, this model's starting point is that effort at work is spent as part of a socially organized exchange process, in which this effort is (or is not) compensated by occupational rewards (ibid.). Rewards are provided in terms of money, esteem, and career opportunities including job security. Siegrist (1996) suggests that stress related to an imbalance between effort and reward can arise under three conditions, where an employee: 1) has a poorly defined work contract or where that employee has little choice concerning alternative employment opportunities; 2) accepts that imbalance for strategic reasons such as the prospect of improved future working condition, and 3) copes with the demands of work through over commitment (ibid.).

Figure 2: Schematic representation of the Effort-Reward Imbalance Model (Siegrist, 1996)



Empirical evidence suggests that the effort-reward imbalance model provides a fruitful framework for examining work stress and its contribution to the development of physical and psychological disease (Kompier, 2003). Studies have demonstrated that employees whose working situation is characterized by a combination of high effort and low reward are at higher risk for cardiovascular health, sickness absence and subjective health complaints.

To conclude, the Demand-Control model and the Effort-Reward Imbalance model are built on the interaction between the individual and their work environment and they recognize the importance of the individual's perception of that interaction. These theories have, together with the other main theories in occupational health psychology, been operationalized in the form of a questionnaire concept for the assessment and improvement of the psychosocial working environment at the enterprise level (Kristensen et al, 2005; Pejtersen et al, 2010). The questionnaire, including the most important factors of psychosocial working environment discussed above on the basis of Kompier (2003), is often used as a practical tool for the mandatory workplace risk assessment Danish enterprises must perform every third year.

The scales and items of the psychosocial questionnaire are listed in Table 1. These important psychosocial factors should, in principle, be included in an audit of psychosocial risk management. However, because the majority of these risks are not directly observable, it is a challenge to audit these risks within the traditional audit practice.

Table 1: Scales and items in the psychosocial questionnaire

Domains	**Dimension**
Demands at work	Quantitative demands, Work pace – tempo, Emotional demands
Work organization and job contents	Influence at work (decision authority), Opportunities for development (skill discretion), Meaning of work, Commitment to the workplace
Interpersonal relations and leadership	Predictability, Rewards (recognition), Role clarity, Quality of leadership, Social support from supervisors
Work-individual interface	Satisfaction with work – job satisfaction, Work-family conflict
Values at workplace level	Trust, Justice, Respect
Health and well-being	Self-rated health, Burnout, Stress
Offensive behaviors	Sexual harassment, Threats of violence, Physical violence, Bullying

5.3 Implementation of interventions to improve the psychosocial working environment

The seven main theories of psychosocial working environment can provide the basis for the design of interventions to reduce psychosocial risks and improve the psychosocial working environment. The implementation of practical intervention programs at workplaces is highlighted by Kompier (2003) to be a challenging process. Kompier (2003) argues there is a large gap between theory and practice particularly reflected in the main challenges to transform research knowledge of psychosocial work environment into primary prevention, i.e. reducing psychosocial risk factors associated with work organization and management (ibid.). In the following, I discuss interventions that are designed to prevent problems or risks in the psychosocial working environment. In so doing, Randall & Nielsen (2010) provide a good basis as they have reviewed a variety of interventions that may be used to improve the psychosocial working environment. Randall & Nielsen (2010) note the theories can help us to understand the links between work and health, and the mechanisms that underpin these links. If we know *factor A* (a work characteristic) is linked to employee health, and the evidence for that linkage is good, we might want to intervene to ensure that *factor A* is well managed (Randall & Nielsen, 2010:90). Practical interventions must therefore be based on both theory and evidence, or in other words, this means that research knowledge must be translated into practice (Kompier, 2003). Before I focus on interventions that are designed to prevent problems or risks in the psychosocial working environment it is, however, first relevant to look briefly at different types of problems and the implications for interventions.

5.3.1 Characteristics of problems and interventions

Interventions can be characterized as simple, complicated or complex depending of the problem's characteristics (Funnell & Rogers, 2011; Krogstrup, 2016; Lildal-Granås & Mac, 2016; Stacey, 2011; Snowden & Boone, 2007; Renn, 2008). The following characteristics of three kinds of problems and intervention are principally based on Funnell & Rogers (2011), Krogstrup (2016) and Snowden & Boone (2007).

Simple problems – simple interventions have certain characteristics. Simple problems can be characterized as technical problems and there is a close connection between the cause of the problem and their solution. This means it is not difficult to identify the cause of the problem, and therefore it is also possible to identify unambiguous solutions and create "best practice". In other words, there is low uncertainty about how to achieve the desired result and limited disagreement on the target. The simple intervention is standardized and can be implemented in the same way in different places and by different people across the globe.

Complicated problems – complicated interventions have the following characteristics: It is more difficult to find the causes of the problems and thus consider which solutions can be created. Here is not only one correct solution, but rather several possible solutions. The difficulty with complicated problems is to analyze the possible solutions to the problems and choose between them. Working with complicated problems requires professional expertise and the ability to create "good practice". Both simple and complicated problems rest on a foundation of order and stability, and common for these problems is that it is possible "to think out" the best solutions based on facts and expert analysis.

Complex problems – complex interventions have quite other dynamics dominating. They are characterized as being merely social and not technical. This implies that the problem is changing and the solution is socially dependent. Social problems arise in a complex and opaque interaction with many variables, so there is no clear cause-effect relationship, or, to put it another way, here are no clear explanations of problems and even when you can identify explanations for the problems, there are multiple relevant actions. This is especially true when there are social processes involved that require new approaches, roles and behaviors of the actors. As complex problems and interventions contain ambiguous causes and solutions, there are thus no clear recipes or rules that can ensure success. Therefore, when planning interventions to manage problems that are complicated or complex, Funnell & Rogers (2011) recommend involving a wide range of stakeholders to elicit divergent views and create space for dialogue and sharing knowledge. Renn (2008), who works with challenges in risk governance, also lets risk characteristics determine which design is appropriate in risk management interventions. He argues it is necessary to devise different strategies for dealing with risks depending on whether they are characterized as linear or routine, complex, uncertain or ambiguous. The majority of risks are, according to Renn (2008), characterized by a mixture of complexity, uncertainty and ambiguity and, like Funnell & Rogers (2011), he recommends a reflective and participatory risk management approach.

The characteristics of the problems and corresponding interventions also affect how interventions can be evaluated. In evaluation theories, a distinction has been made between tame and wicked problems with regard to the subject of evaluation (Head & Alford, 2013; Krogstup, 2011). Along the

tame-wicked continuum, there are degrees of wickedness, and the more complex and diverse the situation, the more wicked the problem (Head & Alford, 2013). When the problem is tame, it is possible to provide de-contextualized knowledge about the outcomes. On the other hand, if the problem is wicked, the context has a decisive influence on both the nature of the problem of intervention and thus on the effects the intervention will achieve. Knowledge of the relationship between intervention and effect will therefore be contextual. Contextualized and de-contextualized knowledge has to be considered as extreme points on a continuum (Krogstrup, 2011).

As concluded in chapter 3 concerning OHS management system standards, the risk management system has to be implemented according to the prescriptive management principles (OHSAS 18002, 2009). These management principles are based on a clear cause-effect relationship, closed system, stability and rational implementation (Røvik, 2007). Thus, the management perspective is linked to an understanding of problems and interventions as simple or tame, which does not fit very well with the management principles of psychosocial risk (Leka, Cox and Zwetsloot, 2008; Leka et al, 2011a; Hohnen et al, 2014; Jespersen et al, 2016b). Some of these management principles are linked to an understanding of problems and interventions as complex. These points lead me to a discussion of interventions to improve the psychosocial working environment with a focus on barriers and drivers for implementation of interventions.

5.3.2 Categorization of interventions to improve the psychosocial working environment

Interventions to improve the psychosocial working environment at the enterprise level are based on different paradigms (Starheim, 2012). Interventions that are based on the OHS risk management paradigm are focused on organizational-level interventions (Leka & Cox, 2010) or, in other words, on primary risk reduction targeted on the organization as the generator of the risk (Walters et al, 2011). Organizational-level occupational health intervention can be defined as planned, theory-based actions to remove or modify the causes of hazards or stressors at work and aim to improve the health and well-being of participants (Nielsen et al, 2010).

LaMontagne et al (2007) categorize interventions as primary, secondary and tertiary. The objective of primary intervention is to deal with aspects of work design, organization and management. These interventions are sometimes referred to as organizational-level interventions or group-level interventions. The objective of these interventions is to remove, or to tackle, the source of the problem inherent in the organization's structure or culture. The objective of secondary interventions is to reduce or eliminate the harm that employees might experience, but not to directly reduce their exposure to problems at work. Secondary interventions aim to give the employees the skills they need to respond to hazards in a way that reduces the impact that work-related problems have on them. Tertiary interventions are aimed at employees who are already experiencing significant problems with their well-being (ibid.).

5.3.2.1 Drivers and barriers for implementing interventions

In practice, there are both drivers and barriers for implementing interventions based on the risk management paradigm. Leka et al (2015) report that, although the amount of evidence shows that psychosocial hazards of work have substantial cost for individuals, organizations and society as a whole, it is still difficult to address psychosocial risks in a preventive fashion (ibid.). Sensitivity of psychosocial issues, lack of awareness, lack of resources, and lack of technical support, guidance and expertise are reported to be the key barriers at enterprise level (EU-OSHA, 2012b).

Methods that describe systematic approaches to improve the psychosocial work environment have been reviewed by researchers (Gallagher et al, 2003; Leka & Cox, 2008; Holten & Nielsen, 2009; Nielsen et al, 2010; EU-OSHA, 2012b; Mellor et al, 2013). From these reviews, the principles that interventions should include employee participation at all stages of the intervention process, senior and line management support and commitment, systematic approaches, and availability of adequate knowledge and skills of management and employees, can be discerned. These four key principles are elaborated in the following section.

The first principle is employee participation. Five European methods for conducting organizational-level interventions were reviewed, and all these methods have employee participation as a guiding principle (Nielsen et al, 2010). Employee participation is important because it provides a way of making use of employees' job expertise and knowledge of the organizational context; this provides an important supplement to research knowledge and the expertise of intervention experts (ibid.). The second key principle is senior and line management support and commitment. Mellor et al (2013), through five case studies, examine how Management Standards in UK are translated into organizational practices, finding that senior management commitment and worker participation are a key element to managing work-related stress. Across all the case studies, senior management support was perceived as a key enabler, and persuading senior management to understand stress as an important business issue was often the first obstacle to overcome (ibid.). Nielsen et al (2010) also find senior management support as a key driver. In order for an organization to successfully plan, implement and evaluate an intervention program, good management support is necessary and considerable evidence shows the negative impact a lack of management support can have on interventions (ibid.).

A systematic approach to the efforts of improving the psychosocial working environment is the third important principle for implementing successful interventions. Leka & Cox (2010) draw on the psychosocial risk management model in their explanation of what is covered by a systematic approach. This psychosocial risk management approach is, as already described in chapter 3, based on a systematic evidence-informed practical problem solving strategy (ibid.). Thus, the psychosocial risk management model belongs to the category of causal models, i.e. indicating a set of causal relations between a number of elements. The risk management process is described as a stepwise iterative process which consists of the following five stages: Risk assessment and audit of existing management practices and employee support; translation of the risk assessment information into a practical plan to reduce risk (solution); risk reduction (implementing the action plan); and evaluation of process of implementation and outcomes (Leka et al, 2008). The abstract principles the risks management paradigm is based upon have to be translated into practice, and new empirical research

has shown it was difficult for the majority of enterprises to translate the risk assessment into action plans and to evaluate the interventions (Gilbert et al, 2015). Some of the challenges of implementing and evaluating primary interventions can perhaps be connected to the fourth principle, which is knowledge and skills. In an analysis of drivers and barriers for psychosocial risk management (EU-OSHA, 2012b) 30-40% of European establishments directly expressed a need for information or support on how to design and implement preventive measures, how to assess psychosocial risks, and how to deal with violence, harassment or work-related stress in general. This issue of knowledge and skills is reflected in an analysis of methods to ensure a good psychosocial working environment in a Danish context. Holten & Nielsen (2009) concluded that there is a need to identify the competencies required to implement primary intervention with a focus on the psychosocial working environment (ibid.).

Based on the impressive existing body of knowledge on the psychosocial working environment and the legal emphasis on the risk management paradigm, which put primacy on prevention at the source and environment, one might expect a translation of theory and policy into practical organizational-level interventions to improve the psychosocial work environment. This is, however, not the case, because there is both a large gap between theory and practice (Kompier et al, 2003; Cox et al, 2000) and between policy and practice (Iavicoli et al, 2014; Hasle et al, 2014). In comparison to other types of interventions, there are relatively few published studies of primary interventions and a major reason for this is the fact that managers almost never implement primary interventions but generally secondary and tertiary interventions (Randall & Nielsen, 2010). Managers may think that sources of stress are resident in the individual, argue Randall & Nielsen, but managers may need to be persuaded that some occupational health problems can have their root cause in the design, organization and management of work (ibid.). This argument is followed by Walters (2011) and Murphy & Sauter (2003) who stress it is uncomfortable for managers to realize that the psychosocial risks are structural and organizational in origin because it may be seen as shifting the responsibility for the problems across to them and away from individual employees (ibid.) Psychosocial risks are thus highly politicized, relating, for instance, to the employer prerogative. The imbalance of power is also highlighted by Leka et al, (2008) as a potential barrier to the implementation of primary interventions. Employers see work organization as their realm and they do not like employees to determine how to design and manage the psychosocial work environment (Leka et al, 2008:124).

To conclude, addressing psychosocial risks in OHS management systems involves identifying and managing risk factors arising from the work organization and management. Moreover, psychosocial risks are characterized as frequently multi-causal, contextualized, rarely visible and inextricably related to conflicts of interest and power (Hohnen et al, 2014). In addition, psychosocial risks are, to a large extent, determined by the way in which people perceive them and are therefore dependent on subjective differences in the perception of a problem or risk (Rick & Briner, 2000). Overall, these characteristics have important implications for the prevention of psychosocial workplace risks through organizational-level interventions. The organization-level intervention has to be evaluated. The evaluation approach should not only be able to capture the complex or wicked character of psychosocial risks (Jespersen et al, 2016b), but also the key principles of psychosocial risk management, and the process and outcomes of the intervention (Leka & Cox, 2010; BSI, 2011). In the next section, I discuss the evaluation of interventions, including different evaluation paradigms and

what implications they have for evaluating interventions that are complex interventions based on context, theory and evidence.

5.4 Process and outcome evaluation of interventions

A crucial element in the psychosocial risk management model is process and outcome evaluation (Leka, Cox & Zwetsloot, 2008). Evaluation is a systematic assessment and the basic purpose of the evaluation is to gain knowledge that can be used in practice as a basis for making decisions about future actions (Dahler-Larsen, 2012). The word systematic would indicate it is an assessment of an intervention based on systematic data collection (Krogstrup, 2016). The evaluation of interventions in occupational health and safety is of central importance to both practitioners and researchers in order to further develop knowledge of whether or not interventions at the worksites have had the desired effect (Kristensen, 2005). However, due to methodological deficiencies, the effectiveness of such occupational intervention studies has been difficult to assess and determine (Cox, Griffiths & Rial Gonzales, 2000).

Different evaluation paradigms exist, and the majority of intervention research uses the natural science paradigm and a Randomized Control Trial (RCT) design as a basis for evaluation (Griffiths, 1999). The bio medical paradigm focuses on *effect evaluation*, i.e., it is designed to answer the question: what changes? Many researchers suggest that one way of increasing both the quality and quantity of occupational intervention research is to make greater use of *process evaluation*, which is about understanding how and why an intervention works (Griffiths, 1999; Nytrø et al, 2000; Saksvik et al, 2002; Cox et al, 2007; Randall et al, 2007; Biron et al, 2012). Among others, Cox et al, (2007) stress that the traditional scientific paradigm may be ill-suited for investigating complex social systems and a broader framework for the evaluation of organizational level interventions may yield a greater breadth of information regarding the effectiveness of these types of intervention (ibid.). Process evaluation focuses on evaluating the underlying mechanisms of change and the contextual factors that might influence the outcome of the intervention. Process evaluation can thus be used by organizations to identify problems with planning and/or implementation and it can also help them to understand why interventions succeed or fail (Nielsen et al, 2006). In other words, process evaluation may help researchers and practitioners to identify the “ingredients” for successful intervention implementation (Randall & Nielsen, 2010). Process evaluation is, however, rarely sufficient, since it is also necessary to know whether the processes in the intervention do, in fact, have an effect. Here, the realistic evaluation approach with a focus on both process and effect may be a relevant option. This evaluation approach has some important advantages with respect to evaluating interventions in the psychosocial working environment. When we are dealing with interventions to improve the psychosocial working environment, we are dealing with complex social interventions which act in complex, dynamic social systems (Pedersen et al, 2012; Pawson et al, 2005). A realistic evaluation approach explicitly relates to the nature of social complex problems and their solutions, including both decontextualized and contextualized knowledge, bridges the gap between process and effect evaluation, and uses quantitative and qualitative methods (Pawson & Tilley, 1997; Biron et al, 2012). In the following, I further develop the realistic evaluation approach.

5.4.1 The realistic evaluation paradigm

Realistic evaluation is a reaction to limitations in RCT design (Pawson & Tilley, 1997). While RCT design generates knowledge concerning whether or not the intervention works, realistic evaluation has a focus on the relationship between process and effect, which opens the "black box" (Kazi, 2003). The realistic evaluation approach has a scientific theoretical foundation of "critical realism" (Bhaskar, 1978) and the realistic evaluation paradigm has the potential of "white box" evaluation (Kazi, 2003). The purpose of realistic evaluation is to investigate and document what works for whom under what conditions (context). This evaluation approach thus aims to open up the "black box" of interventions and programs and not simply examine whether intervention works, but also why they work and how (Pawson & Tilley, 1997).

The basis for a realistic evaluation is a program theory (Pawson et al, 2005). A program theory can be defined as explicit assumptions (theories) about how an intervention such as a project, a program, a strategy, or a policy contributes to the intended effect: When we do such and such, such and such happens. Alternatively, expressed in another way: Why do we believe that a given intervention works and how do we think the intervention works? (Krogstrup, 2016). Establishment of the program theory is performed with the aid of several sources of knowledge (Pawson & Tilley, 1997) and there will be elements of the program theory that is based on relatively certain knowledge, although the available knowledge of other elements will be more uncertain or missing. Here, the actors must make a qualified estimate to build a bridge between the areas where knowledge is more certain (Hasle et al, 2016).

Program theories can be explained as ideas regarding the relationship between causes and effects which are identified through so-called CMO-figurations: Context (C) + mechanism (M) = outcome (O) associated with an intervention (Pawson & Tilley, 1997). What constitutes the key concepts mechanism, context and outcome is now clarified. Mechanisms are the power which causes a program to work (Pawson, 2006). Therefore, to understand how the program theories work, we must examine the underlying mechanisms linking cause and effect, that is, the inner relationship that works under the observed surface (Bredgaard et al, 2016). Mechanisms thus act under the visible surface and cannot be observed directly (Pawson & Tilley, 1997) and they are sensitive to variations in the context.

The realistic evaluation approach recognizes the complexity in which interventions occur. Interventions take place in organizations which always exist in a unique context different from other organizations (Kazi, 2003). A program theory must therefore involve the contextual conditions that may affect the relationship between intervention and outcomes. The relationship between the mechanisms and outcomes is not fixed in advance but contingent, that is, dependent on the context (Krogstrup, 2016). Therefore, whether the potential of a mechanism creates certain outcomes depends on whether the context is able to activate the mechanisms. Context includes both internal structural and cultural matters as well as external conditions, such as the market, stakeholders, and sector characteristics (Hasle et al, 2014). An outcome is thus the results (both the intended and unintended) that are created when an intervention or program leads to actual changes (Krogstrup, 2016).

The evaluation of the program theory is to assess whether what we assume might work, actually works as assumed. This means that, when one wants to know whether the mechanisms or assumptions actually work, we need to empirically test the causal relationships of the program theory. Methods to be used in the evaluation are determined by what methods are best suited to test the established theory, and both quantitative, qualitative and mixed methods can be used (Pawson & Tilley, 1997). The result of the evaluation is an answer to the question: what works for whom and under what circumstances? This knowledge can be used to improve the existing program theory and thus increase the likelihood for desired outcomes of an intervention to occur. To the extent that the result can be generalized outside the context where the evaluation is carried out, the result is called "evidence-based" (Krosgstrup, 2016).

To summarize, interventions are not presumed to have causal powers in themselves, but are crucially dependent on context and implementation. Context and mechanism are thus seen as the factors which trigger or initiate the causal relationship (Pawson & Tilley, 1997). Pedersen et al (2012) exemplify this point by stating, for instance, that motivation from the key actors is a necessary ingredient for the intervention to work; therefore, the actual outcome of the intervention will vary depending on the intervention, the context, the mechanisms and the interplay between these and can be categorized as positive or negative, expected or unexpected (ibid.).

5.4.2 Comparison between classic effect evaluation - RCT - and realistic evaluation models

Evidence-based evaluation is founded on two ideal-types of evaluation models: RCT and realistic evaluation. As mentioned earlier, the realistic evaluation paradigm is a critique of the RCT evaluation paradigm. Included in the criticism is that RCT implicitly understands social problems and, correspondingly, interventions, as simple (Krogstrup, 2016). Furthermore, the model is not suitable to address complexities in practice, and the implementation is a "black box" because this evaluation paradigm does not contribute with knowledge of the strengths and weaknesses of the implementation process, but rather only answers the question whether the program works or does not work, i.e. focuses only on outcomes (Kazi, 2003). To illustrate the similarities and differences between the two evaluation paradigms, I have developed a table with much inspiration from Krogstrup (2016) and Bredgaard (2016). Table 2 shows the differences and similarities between the RCT and realistic evaluation paradigms.

In conclusion, the two different evaluation models match different types of problems and interventions. Audits of OHS management systems are not normally conducted as full-scale evaluations neither after RCT nor realistic evaluation, but the above analysis of the two approaches indicates that the understanding behind RCT would rarely be useful when interventions to improve the psychosocial working environment should be assessed as part of an audit. Here, the understanding behind realistic evaluation with context dependency and complex social interactions would be more relevant.

Table 2: Comparison between RCT and realistic evaluation models

Dimensions	**Classic effect evaluation – RCT**	**Realistic evaluation**
Theory of science base	Basis in classic positivism Flat ontology	Basis in critical realism Deep ontology
Evaluation question	Whether and to what extent an intervention works or does not work	What works for whom, under what circumstances, in what respects and how
Focus	Outcomes or effects	Connect outcomes and process or implementation
Evaluand	Most relevant to simple problems and, correspondingly, simple interventions	Simple, complicated and complex problems and similar simple, complicated and complex interventions
Methods	Quantitative methods	Quantitative and qualitative methods and mixed methods
Knowledge (base)	Decontextualized and global knowledge Focus on directly observable facts	Contextualized but transferable knowledge Focus on often underlying mechanisms that cannot be observed directly
Theory of causality	'Successionist' causal theory Horizontal understanding of causality Clear cause-and-effect relationships Certain causal connection between implementing intervention and outcomes	Generative causal theory Vertical understanding of causality Unclear cause-effect relationships Relatively uncertain causal connection between implementing intervention and outcomes

6. Design and methods

My research design is determined by my research questions and by my ontological basis as critical realist. The main aim of my Business PhD project is to develop a concept that can qualify audits of psychosocial risks in certified OHS management systems. Limited empirical research has been conducted on this subject. However, as stressed in chapter 2 concerning regulation of psychosocial working environment in Denmark previous empirical research has indicated difficulties in addressing and auditing psychosocial risks in OHS management systems in a Danish context (Hohnen & Hasle, 2011). Therefore, I seek to create new knowledge about what constitutes the practical and theoretical challenges of addressing and auditing psychosocial risks in certified OHS management systems. Based on this new knowledge, an audit concept has been developed that takes into account these challenges. In this chapter, I present the research design and methods I have used to answer my research questions. However, before doing this I discuss the critical realism paradigm in relation to my dissertation.

6.1 The critical realism perspective

Critical realism can be understood as a meta-theoretical perspective which concerns ontological and epistemological questions. Critical realism can be understood as a scientific theoretical position that is in opposition to both the empiricist and positivist positions on the one hand, and various idealistic and relativistic positions on the other. Danermark et al, (2002) refer to critical realism as a "third way" in the epistemological debate between, in one respect, empiricism/objectivism and, on the other, relativism/idealism (Danermark et al, 2002: 202). Realist scientists claim that reality has an objective existence that exists outside human experience. Therefore, realists maintain emphasis on objectivity, but disagree with the positivists on the nature of reality and therefore also how to attain knowledge about reality. Positivism perceives knowledge as a question of certain and absolutely true knowledge, which can be established through neutral empirical observation. In opposition to this are the critical realists who, on an epistemological level, agree with the moderate social constructivists who believe it is not possible to produce absolutely true, non-interpreted knowledge of social phenomena, as scientific knowledge must be considered as a social product (Danermark et al, 2002: 22). The following provides a brief summary of the characteristics of the foundation of critical realism, founded of Bhaskar (1978), where I, in particular, have focused on the significant differences between a realistic and empiricist-positivist approach. In so doing, I primarily build upon Sayer (2000) and Danermark et al (2002).

6.1.1 Ontology and epistemology

One of the important reasons for the development of critical realism is the critique of the positivist approach. Critical realism's ontological assumptions involve a comprehensive showdown with the flat ontology of positivism and the empirical understanding of causality (Danermark et al, 2002:8). Danermark et al, (2002) claims that a positivist approach reduces reality to the domains of events and empirical observations, and causality is understood as regular connections between observable

events (Danermark et al, 2002:4-5). Critical realism's ontological and epistemological starting point is that reality has an objective existence, i.e. that there is a reality which works independently to the concepts we have about it. According to Bhaskar (1978), it is the ontological, not the epistemological, questions that must be the starting point: How is the reality constituted?

In critical realism's perception of reality, it is assumed that the reality is not only very complex, but also perceived as being stratified into different layers or domains. A distinction is made between three successive overlapping layers of reality: the real, the actual and the empirical. The *real* or deep domain consists of structures, forces, trends and mechanisms which exist irrespective of whether or not they produce any actual incidents. When the mechanisms are producing an actual event, whether observed or not, it falls within the *actual* domain. When these events are experienced or observed, they are an empirical fact and fall within the *empirical* domain. The reality, according to critical realism cannot therefore be reduced to the empirical and actual domains in which case it appears as flat, i.e. without ontological depth (Sayer, 2000: 11-12).

One of the most distinctive features of realism is its analysis of causation. A cause is that which makes something happen in the world. Critical realism replaces positivism's horizontal causal explanation model – with event A, so follows event B – with a vertical causality understanding which seeks to explain events in the underlying mechanisms. According to Danermark et al's (2002, cause the real stratified nature that is the focus in social studies should be on identifying the mechanisms, structures and forces that can explain the phenomena we are investigating (Danermark et al, 2000: 41- 43). In realism, knowledge and understanding is developed of the mechanism through which an action may cause a result (outcome), and on the context which constitutes the conditions for triggering the mechanism. Sayer (2000) talks about causal mechanisms to some extent, but also about forces that can either be activated or remain dormant. "Explanation depends on identifying causal mechanisms and how they work, and discovering if they have been activated and under what conditions" (Sayer 2000: 14), which means that the same mechanism can produce different outcomes depending on the context. Sayer (2000) highlights that, behind a course of events, some forces that generate them can be found, and the fundamental task of science is to find the mechanisms that generate events. The reality is full of such causal powers, and they exist regardless of whether or not they have been activated. To reach the knowledge of the underlying causal mechanisms, it is necessary to focus on them and not on the observable events in the empirical domain. In this way, critical realism separates perception of causality from empirical or positivist realism, which claims that everything real is empirically observable and that the empirical domain gives us a reliable picture of reality (Danermark et al, 2002). The starting point for critical realism is that there is a reality independent of our concepts concerning it, but also that this fact is not immediately given and available empirically. Thus, the reality comprises a not directly observable dimension where the mechanisms that produce the events we can observe empirically can be found.

The opposition to positivism is, as mentioned earlier, particularly reflected in that critical realism rejects positivism's perception of causality. The positivist approach has a linear causal perception and looks for elements that resemble regularities. The positivist view of causation is understood on the model of regular successions of events (Sayer, 2000:14). In contrast, the realistic perspective has an emphasis on non-linearity and complex causality.

Sayer (2000) stresses that social and human phenomena are produced by social mechanisms which work in a dynamic and open social world. This means that within social science it is frequently not possible to isolate the cause-effect relationship. In contrast, scientific experiments can induce certain events by creating closed conditions in order to keep the generative mechanisms under control. Such special conditions where one can make studies of causal-effect relationships in close systems do not exist spontaneously in the social world (Sayer, 2000: 15). In the case of social events, the causes can be infinitely complex and a given outcome is often created by a number of cooperative mechanisms that interact or counteract. This is due to the fact that human actions are always embedded in different contexts, and the actions take place in open rather than closed systems. In open systems, one cannot find universal regularities for complex and contextual phenomena. Sayer (2000) points out that open systems are far too complicated and contextualized to be captured through simple empirical logic. In the social world, events are not predetermined before they happen, but depend on "contingent conditions". This means that the cause-effect relationships should be studied in complex, "open systems" since the outcomes will depend on the context. The critical realism's understanding of causality is therefore radically different from the positivist.

Another key feature of critic realism is the interaction between actors and social structures. The relationship between actors and structures plays a key role in critical realism. Ontologically, there are differences in social structures and natural structures. The main difference is that social structures, in contrast to structures in nature, are activity-dependent. It is social structures that lay down the conditions for what we can and cannot do by placing us in various social situations (Danermark et al, 2002: 193), but social structures cannot act; only humans can - agents are the only effective cause of society (Danermark et al, 2002: 179). A key assumption in critical realist ontology is that social structures play an important role in the understanding of why social actors act as they do. Structures are not determined to act absolutely, but make conditions for it, while the structure itself is conditional on deposits from past actions. The perception is therefore that social structures play a role in determining how people act in certain contexts. These structures can either be limiting for human freedom or create possibilities for action, and social structures cannot be changed by other ways than through human activity (Danermark et al, 2002: 180-186).

The last key feature of realism that is important to mention here is its recognition of the hermeneutical conditions in social sciences. The critical realistic approach considers scientific knowledge as knowledge that is socially produced, as this approach considers the interpretation as a necessary precondition for the production of knowledge (Sayer, 2000: 17). However, although social phenomena are internally meaningful and must be understood, critical realism claims, in contrast to interpretive science, that an interpretative element in the social sciences does not exclude causal explanation, and it is possible to develop reliable knowledge and progress in knowledge (Sayer, 2000: 18). Overall, the critical realists can thus be understood as ontological realists and epistemological relativists.

6.1.2 Critical realism and design

Danermark et al (2000) underline that, in any social scientific study, there should always be a clear link between the ontological and epistemological basis and practical research techniques (Danermark

et al, 2000: 4). In other words, Danermark et al (2000) refer to the three aspects which are included in the term "methodology", namely ontology, epistemology and method. What consequences does a critical realist ontology and epistemology have for the choice of design and methods? Critical realism is compatible with a relatively wide range of research methods, e.g., quantitative and qualitative methods can be combined and complement each other. This means, however, that the choices between these methods are based on the nature of the study, and what we want to know about it, i.e. the purpose of the study (Sayer, 2000: 19). Sayer, in this context, claims it is perhaps most important to ”reject cookbook prescriptions of method which allow one to imagine that one can do research by simply applying them without having a scholarly knowledge of the object of study in question” (Sayer, 2000: 19).

Another consequence that also guides the design of the study is the relation between theory and empirical data. Theorizing and concept formation play a central role in a critical realistic approach. As previously highlighted, realism is based on the assumption that reality contains relational depth structures and generative mechanisms behind the empirically observable events and patterns, and these mechanisms cannot be observed. Because the mechanisms cannot be observed directly, they must be identified analytically. Theories are socially constructed within the framework of history and serve as an interpretative framework, as the theoretical language always includes an interpretation of the social reality. Danermark et al (2002) emphasize that the theories are used to explain events and actions are inevitable because they conceptualize causal mechanisms. Therefore, we can never understand, analyze and categorize reality in another way than through a theoretical language of concepts. This means that a research object will always be theoretically defined and that theory and conceptualization come before the empirical study. The choice of method will thus depend on the theoretical starting points (Danermark et al, 2000: 116-117). Sayer (2000) sees the objects which social scientists are studying as concrete in the sense that they are products of diverse components and forces. However, since social systems are always open and usually complex, one cannot isolate these components from each other and study them under controlled conditions. Sayer (2000) claims we therefore need to rely on careful conceptualization. To conceptualize involves abstraction, and the purpose of abstraction is to make it possible to separate that which is characteristic in an object from that which is more contingent (Sayer, 2000: 19).

There are four modes of interference: deduction, induction, abduction and retroduction (Danermark et al 2002: 79). Two modes of interference - abduction and retroduction - constitute crucial processes in a realistic analysis strategy. By abduction and retroduction, we see causalities (connections) and structures not directly obvious in the empirical reality. Abduction concerns gaining knowledge of structures and mechanisms behind the immediate empirical event. Danermark et al, (2000) considers abduction as being to consider, interpret or explain something within the framework of a new context (Danermark et al, 2002: 96). Danermark et al, (2000) consider that the concept of retroduction is difficult to separate from the concept of abduction with regards to concrete research. Retroduction concerns the way you have to think when coming from the empirical observations and to identify the underlying mechanisms. This means that retroduction can be described as a of mode of interference by which we go from a description and analysis of specific actions or a manifest phenomenon to reconstruct the necessary and basic conditions for these actions or this phenomenon to be what it is. In other words, it's about finding the structures and

mechanisms that must exist for this action or this phenomenon to take place (Danermark et al, 2002: 96).

With regard to methods, critical realism does not make a basic division between quantitative and qualitative methods, but instead foregrounds intensive and extensive research designs which have complementary strengths and are both used in the search for generative mechanisms (Danermark et al, 2002: 176). The intensive design is used to investigate a specific case or a small number of cases. The actors are studied in their contexts, and the typical approach is qualitative interviews, participant observation and qualitative analysis. Sayer (2000) supplements this by claiming that the limit of this method is, in particular, that it is difficult to know whether the results are average, representative or generalizable. On the other hand, intensive research is strong on causal explanation and interpreting meanings in context (Sayer, 2000:21). The extensive design is aimed at the elucidation of regularities, common patterns, representativeness, and generalization and informs us of the quantitative dimension of certain attributes and relationships. The typical approaches are questionnaires with fixed response alternatives, standardized interviews, and large surveys. Statistical analysis is the dominant form of analysis. The limitations of the method are, according to Sayer (2000), that it has limited explanatory value because statistical explanations are not explanations in terms of mechanisms at all, merely quantitative descriptions of formal associations (Sayer, 2000: 22).

To conclude, critical realism has influenced my research design by the understanding of social systems as open and causality as complex and stratified in different domains. To create new knowledge of reality it is therefore necessary to focus on social phenomena in the real unobservable domain that constitutes what is experienced or observed in the empirical domain. My design is also influenced by the two modes of interference: abduction and retroduction, i.e., how I go from describing and analyzing the manifest phenomena to reconstructing the conditions that may exist for this phenomenon can take place. With regards to methods, the dissertation draws on an intensive research design to investigate a specific case where the actors are studied in their context.

6.2 Research design

This part of the chapter deals with the research questions, phases of the research process, and what methods and data I have used to answer the research questions. The purpose of my Business PhD project and the ontological basis as critical realist has suggested the following research question:

- What constitutes the practical and theoretical challenges of auditing psychosocial risks at Danish workplaces based on certified OHS management systems and how can audits be developed in order to cover psychosocial risks in a qualified manner?

The issue to deal with is thus an empirical problem-oriented one which means that it involves studies of, or solutions to, a concrete problem. My research question is broken down into the following three sub-questions:

1. How do certified municipalities in Denmark translate audit principles into audit practice with a focus on psychosocial risks?

2. What are the characteristics of psychosocial risk factors in accordance with the existing research literature, and what implications does this have for management of interventions in the psychosocial working environment?

3. How can audits of the psychosocial working environment be conceptualized taking into consideration the nature of psychosocial risks?

The research process for answering these research questions consists of three steps. The first step is locating and characterizing of the phenomenon studied through empirical experiences, and the second step is the abduction of the potential forces and endogenous and exogenous mechanisms of the phenomenon. Here, the real domain is linked to the actual domain on the basis of experience in the empirical domain. The final step is a presentation of the results of the constitution of the phenomenon. These results form the basis for developing a model which provides conditions for practical use. These three steps are now explained in more detail in relation to my project.

On the first step in the empirical domain, I, together with the other researchers from CERPA, produce a case study in two Danish municipalities to obtain knowledge of the specific practical challenges with regard to auditing OHS management systems that include psychosocial risks. In the empirical domain, we also undertake a document analysis of the OHSAS 18001 standard as well as the PAS 1010 standard. This document analysis was performed to create knowledge on how these standards understand organizations, risks and management, and what similarities and differences there are between the knowledge base of these standards.

Step two in my design focuses on the theories that help to explain the practical and theoretical challenges with auditing psychosocial risks in certified OHS management systems. Therefore, it is particularly relevant to focus on theories on the nature of psychosocial risks and interventions to improve the psychosocial working environment, as it is this field that has to be regulated through OHS management systems audits. I examine psychosocial risks and psychosocial risk management by integrating theory and concepts of psychosocial risk factors, the characteristics of psychosocial risks and interventions in the psychosocial working environment. In addition to these theories, I draw on evaluation theory, as auditing is a form of evaluation. Audit has an evidence-based approach; therefore, I draw on the two perspectives on evidence-based evaluation methods – the positivistic and the realistic perspective – in which I particularly focus on the two perspectives' ontology, and what implications it has for the understanding of audit evidence.

In the third and final step, I have developed a concept for audits of OHS management systems that is able to capture the special character of psychosocial risk management. The concept is both based on empirical data from phase 1 and theories from phase 2. The PAS 1010 standard is the empirical basis of the developed concept and the theoretical basis is theories of psychosocial risks, psychosocial risk management interventions, and realistic evaluation. Realistic evaluation is a theory-driven evaluation, and program theory, also called intervention theory, is a key tool. Auditing based on a realistic evaluation approach is thus an empirical test of whether the implemented system of psychosocial risk management actually works as expected. The program theory is therefore the evaluation criteria or the evaluation basis and both draw on knowledge concerning psychosocial risks, organization and management, and facilitation skills. The developed concept has not yet been

tested systematically in practice. In the following, I look more thoroughly into the methods and data used in the four studies of my dissertation.

6.2.1 Methods for data collection

The studies in this dissertation employ a qualitative approach. Qualitative methods are well suited for developing theories (Maxwell, 2012) and for generating the kinds of new knowledge that can help to achieve my aim of improving audit practice. Qualitative methods utilize a holistic approach that is useful for understanding complex social conditions (Patton, 2015) and are appropriate for application to in-depth analysis within a defined empirical field (Yin, 2009).

6.2.1.1 Study 1: Internal audit of psychosocial risks at workplaces with certified OHS management systems

The first study in the empirical domain is about collecting data about practice for audits of psychosocial risks and it was carried out as a case study of how two Danish municipal administrations have translated the principles of audit into internal audit practices capable of targeting psychosocial risks. For this study, I chose to carry out exploratory case studies suited for critical and in-depth testing of theories. The two cases were selected in order to provide data for in-depth study, thus allowing for analytical generalization from case to theory (Neergaard, 2001). As a selection strategy, a 'critical case' was chosen (Flyvbjerg, 2006). A critical case has strategic significance because it is intended to concretize general theoretical issues. A critical case can be identified by testing whether it fits the following statements: If it is occurring here, it can occur everywhere, or conversely, if it is not occurring here it cannot occur anywhere else (Flyvbjerg, 2006). The two municipalities can be characterized as a critical case, because psychosocial risks constitute a large problem and are a highly prioritized target area in the two municipalities. This prioritization is also reflected in the audit of the municipalities' OHS management systems where there is a strong focus on managing the psychosocial working environment in audits.

The two case study municipalities were selected in order to illustrate how certified organizations attempted to translate general audit guidelines and principles into audit practices covering psychosocial risks. The two cases can thus provide an opportunity to show variation and to identify common patterns. The two selected cases are part of a small number (6-8 out of 98) of Danish municipalities that are currently OHS management certified. As the starting point, both municipalities were chosen on the basis of similar criteria: high priority according to the psychosocial working environment and inclusion of the psychosocial working environment in OHS management systems auditing, and both municipalities having been OHS management certified for a number of years, i.e. 8-10. The two cases have thus been selected for their resemblance in certain predefined dimensions and not for attaining maximum variation or contrast. However, subsequent analysis show significant variations in audit practice. Both municipalities are currently certified by Bureau Veritas Certification, which, as mentioned, is the company where I am currently employed. While I had

conducted audits of these municipalities previously, for the duration of my research project, I worked in these municipalities solely as a researcher.

Data collection

Case studies are strengthened by drawing on a variety of sources of data. Varied data enhances the validity of the results and can ensure the interplay between the different methods (Maxwell, 2012). The data collection in the two municipalities, which I have called 'Unify' and 'Diversify', included participant-observation, qualitative semi-structured interviews and review of documents.

Participant observation

In the two municipalities, I conducted participant observation during four internal audits, with a specific focus on auditing of the psychosocial work environment. As a research method, participant-observation is a specific social practice for gaining knowledge about the social phenomenon being studied, through actual participation with informants (Patton, 2015; Czarniawska, 2007; Justesen & Mik-Meyer, 2010). Several ideal type participant roles have been identified, with the author choosing the role of 'participant as observer' where the aim is to disturb the 'natural' interactions as little as possible (Nielsen, 2012). In my role as 'participant as observer', I was open about being present as researcher. All relevant participants were given a thorough explanation for my role as observer and of the purpose behind my research project. The fact that I was open about my purposes and role made it possible for me to conspicuously take notes.

The four internal audits I observed were selected in each municipality by the manager of the audit program. In Unify Municipality, audits were observed at the two elder care facilities, which I will call the 'Hannah Elderly Care Centre' and 'Mary Elderly Care Centre', and in Diversify Municipality, audits were observed at the 'Oliver Elderly Care Centre' and 'Vincent School' (all pseudonyms). In each of the audits in Unify Municipality, three internal auditors participated. In Diversify Municipality, two internal auditors participated in each of the audits. The observations started with observing how the internal auditors planned the audits. Subsequently, I followed the audit visit and reporting process and I participated in follow-up meetings between all auditors involved in the particular audit round. Detailed notes were taken from these four sets of participant observation. The focus in the observations was on how the audit of the OHS management systems covered psychosocial risks in the workplaces. What kind of psychosocial working environment topics were taken up by the internal auditors? What kind of audit criteria guided the internal auditors? What findings were reported? What was left out? Alongside analysis of the actual content of the four audits, I also focused on which methods were applied to conduct the observed audits and how they were applied.

Qualitative semi-structured interviews

Along with my observation of the four internal audits, I conducted qualitative semi-structured interviews with auditors and managers of the audit program. The purpose of choosing semi-structured interviews was to produce new knowledge through our mutual interaction between the interviewee and myself as interviewer. This conception of the interview process represents the ideal type of knowledge as constructed from interviews, in contrast to knowledge as given (Kvale & Brinkmann, 2008). Qualitative, semi-structured interviews were conducted with the managers of the audit program in the two municipalities and with six internal auditors, designated here as auditors 1 through 6. The internal auditors whom I interviewed were selected in collaboration with the managers of the audit program and stratified by experience and educational backgrounds, especially covering both OHS professionals and non-professionals. Interview guides were prepared for the managers of the audit program and the internal auditors and every interviewee was informed beforehand about the themes of the interview.

For the interviews with the managers of the audit program, the questions focused on how they interpreted the standards and guidelines for OHS management systems and for auditing at the municipal level. Other questions dealt with how the principles of auditing were applied in the two municipalities. There were also questions about the purpose of internal audit, the auditors' role, and about recruitment and training of auditors, including requirements for auditors' qualifications and skills. The interviews with internal auditors covered methods for planning and conducting audits and difficulties encountered in audits of the OHS management systems, especially as applied to psychosocial risks. In this context, audit methods are understood as both the overall audit concept, the available tools and techniques, their reflections on practices, and assessments of how audits were conducted. As in the interviews with the managers of the audit program, questions were asked regarding the purpose of audit, auditors' role, recruitment and training of auditors and requirements for auditors' competencies. Each interview lasted between 90 minutes and two hours, and all interviews were recorded and transcribed.

Documents

The last source of data consists of written documents. An important criterion for such documents was that they should contribute to an understanding of how the two municipalities translated the general principles of audit into local models, especially as they pertain to the targeting of psychosocial risks. To this end, I collected various types of documents: audit agendas and internal audit reports produced by the four observed internal audits; audit interview schedules and checklists for auditing psychosocial risks; lists of meeting participants; agendas and minutes of relevant meetings, and audit plans and audit programs.

Data analysis

The data generated through participant-observations, semi-structured interviews and documents were analyzed using a qualitative and inductive approach based on content analysis (Yin, 2009) and

grounded theory (Strauss & Corbin, 1998). My perspective as a critical realist corresponds well to the choice of qualitative content analysis and grounded theory. Qualitative content analysis was chosen because the contextual information plays an important role in my project. The choice of grounded theory is connected to the very open character of my research field, although it is not possible to start work in the complete absence of assumptions. Accordingly, it is perhaps more correct to say that one attempts to minimize the influence of existing theories since it is very rare to run into an issue about which there is no form of knowledge based on theory (Rasmussen et al, 2006). The empirical data produced through the case study was themed and creates the empirical basis for locating the real domain. The analysis consisted of the following phases: open coding, categorization, comparison and summarizing of data and the final analysis and resolution of the research question.

The categories in the data analysis covered the municipalities' similarities and differences with regard to local audit models, the purpose of the audit, the psychosocial working environment issues addressed (or overlooked) in the audits, audit criteria, audit methods, the specific audit findings reported, auditor training, and the informants' views of difficulties of auditing psychosocial risks. Moreover, the different techniques of auditing OHS management systems targeting psychosocial risks were compared in order to generate new understandings of the possibilities for addressing these issues in internal audits.

6.2.1.2 Study 2: Hard Work in Soft Regulation: A Discussion of the Social Mechanisms in OHS Management Standards and Possible Dilemmas in the Regulation of the Psychosocial Work Environment

Within an overall social constructionist perspective, through document analysis, the study critically examines social mechanisms in standards in a sociological regulatory perspective. We analyze standards as written documents and the analysis should shed light on the type of knowledge and assumed logic that can be related to the standards and the construction of standards as text. In the article, we apply the concept "social mechanisms" which we define "as an inherent causal potential in a given social context, e.g. a causal potential that, integrated into a particular knowledge contexts, creates certain direct or indirect reactions or changes". The first part of the analysis is a discussion of, primarily, theoretical organizational studies on standards as a type of regulation. Here we analyze studies that focus on regulation in a broad sense, including types of knowledge, types of logic, and reasoning as well as the overall process of creating standards (Brunsson & Jacobsson, 2000; Power, 1996, 1997).

The second part of the analysis is of the concrete documents related to OHSAS 18001 and PAS 1010 in order to uncover the possible social mechanisms of standards. A social constructionist approach has been used for analyzing what the documents tell us at the empirical level, and a critical realism perspective has been used for understanding the mechanisms the documents may potentially cause. OHSAS 18001 is strategically chosen because it claims to deal with psychosocial risks and, at the same time, reflects intrinsic mechanisms of a range of international management systems standards (Brunsson & Jacobsson, 2000). PAS 1010 is chosen because it has a particular focus on management and regulation of psychosocial risks. This standard is, on the one hand, a supplement to OHSAS 18001 and, on the other, also aims to address deficiencies identified in OHSAS 18001. The analysis focuses

on the concepts and types of logic that these standards entail, how the working environment is addressed and monitored, what types of monitoring are considered reliable, and the types of knowledge base on which the standards are based.

6.2.1.3 Study 3: The Wicked Character of Psychosocial Risks: Implications for regulation

This study, primarily based on research literature, aims to investigate why regulating psychosocial risks can be considered to be more difficult than other occupational OHS risks. The research literature has, to date, not focused on the underlying causes of these difficulties, much less the consequences for regulation in the form of labor inspection and audits of OHS management systems. We have categorized the theories, concepts and prior research findings that inform and guide our study to obtain a better understanding of why it is considered difficult to regulate psychosocial risks into the following four groups: the nature of psychosocial risks, wicked problems, OHS regulation, and the two kinds of inspection: labor inspection and management systems auditing.

We conducted our study by analyzing the present literature in order to elucidate the peculiarities of psychosocial risks compared to physical risks. We then studied the consequences of these peculiarities for the regulation of psychosocial risks as presented in the literature. In this context, we used a concept of regulation (inspired by Jordana & Levi-Faur, 2004) by which regulation is considered to be all societal actions that intend to change behavior for a perceived greater good. We therefore include both labor inspection and OHS management systems audits in our analysis.

We use the concept of 'wicked problems' (Rittel & Webber, 1973; Head & Alford, 2013) to show how workplace regulation, and particularly its enforcement in the form of inspection and audits of certified management systems, faces challenges in assessing psychosocial risks and the strategies used by regulators to overcome these challenges. We have selected two cases that have been subject to sufficient scientific scrutiny to enable them to be reliably assessed. They also represent quite different public strategies for enforcement of psychosocial working environment regulation with a focus on enforcement. The cases are inspection of psychosocial risks in Denmark (Rasmussen et al, 2011; Starheim & Rasmussen, 2014), and the more voluntary approach to management standards in the UK (Leka et al, 2011; Mellor et al, 2011). Following this, we discuss, on the basis of the wicked problems concept, the implications for regulation of psychosocial risks through inspection and audit. The major challenges posed by psychosocial risks we consider concern the assessment of compliance with OHS regulatory standards, the link between psychosocial risks and employers' prerogative, and the particular knowledge and skills needed for the assessment of the psychosocial risks and the psychosocial risk management process. Finally, we put our analysis into perspective by proposing various proactive regulatory strategies for solutions to the problem of regulating psychosocial risks.

6.2.1.4 Study 4: Developing a concept for external audits of psychosocial risks in certified occupational health and safety management systems

The aim of this study was to develop a concept for an audit methodology that would qualify audits of psychosocial risk in certified OHS management systems. The concept is based on the results of the three studies of this dissertation and the other empirical studies that have been conducted in cooperation with the CERPA project. We proposed a new conceptual model that is grounded in the British "Guidance on the management of psychosocial risks in the workplace" (PAS 1010). The development of the concept was based on an integration of the following three analyses: 1) the requirements for qualified audits as outlined in the OHS management standard OHSAS 18001, the guidance PAS 1010, and the ISO 19011 standard about the general audit principles; 2) the challenges for audits of psychosocial risk, where we used the notion of wicked problems, and 3) expansion of the audit knowledge base with data collection and assessment methods that are suitable for psychosocial risks. This builds on recognized methods such as realist evaluation and qualitative interviews as well as an expansion of the auditor competencies.

In the first analysis, we offer a description of the standards OHSAS 18001 and PAS 1010. Thereafter, we analyze the audit principles for management systems audit. We then analyze the challenges of addressing psychosocial risk management within the established audit discourse based on findings from empirical case studies of certified OHS management systems in Denmark. This is followed by a discussion of available methods for audits of psychosocial risks. Subsequently, we merge these analyses into a general concept that is able to capture the characteristics of psychosocial risks, i.e. soft, invisible, politicized, and contextualized OHS risks. We use these three analyses to suggest six basic principles for auditing psychosocial risks and, finally, we discuss auditor competencies, and the challenges in applying our proposed conceptual model in audit practice.

7. Results

The paradigm of critical realism has determined which results I have reached through a scientific examination of management system standards and audits as types of regulatory instruments of psychosocial risk at work. The purpose of my doctoral research has been to develop a concept for auditing psychosocial risks in certified occupational health and safety management systems. Four studies have been carried out in fulfilling this purpose. This chapter presents a summary of the main results of these four studies based on the data and methods described in the last chapter. The first study examines the practical challenges of auditing psychosocial risks which are experienced at the empirical domain of reality. The second and third studies have a focus on the theories that contribute to explaining the underlying mechanisms that produce the practical challenges at the actual domain of reality. These three studies and the other empirical studies that have been conducted in cooperation with the CERPA project provide the background for the fourth study which has been to develop a concept for an audit methodology that is able to cover psychosocial risks in an adequate manner. Thus, the results in the last study give opportunities for developing guidelines which have to be empirically tested.

7.1 Study 1: Internal audit of psychosocial risks at workplaces with certified OHS management systems

The purpose of the first study was to investigate how two Danish municipalities have translated the audit principles into internal audit practice including how the municipalities have translated the requirements of the OHSAS 18001 standard into audit criteria. This translation led to significant variations in audit practice and the two municipalities exhibited both important differences and similarities in the way they translated the OHS management principles and the audit guidelines. Differences were found in the issues addressed during the audits, the respective audit methods and the reported audit findings. In one municipality, there was a strong focus on formalities. This, for example, means there was criticism of inadequate documentation, while the issue of the degree to which identification, prevention and managing of psychosocial risks were effective was only pursued to a limited degree. The other municipality focused on the learning potential but had difficulties in ensuring that the main psychosocial risks were identified, prevented and managed in an adequate manner.

In terms of similarities, despite their very different audit models and practices, both municipalities experienced difficulties to getting the internal audits to work effectively. In particular, it was expressed by the issue that both municipalities had difficulties in finding effective audit methods that could create an appropriate level between formalities, documentation and substance. Furthermore, both municipalities experienced difficulties in assessing the quality of the management of psychosocial risks in the implemented OHS management system. For the internal auditors, using the available audit methods made it difficult for them to assess the quality of various elements of the risk management process, i.e. the identification and assessment of psychosocial risks, design and implementation of primary interventions, and evaluation of the effectiveness of the OHS management system. Moreover, the internal auditors in both municipalities expressed their need for

more knowledge and skills to audit the psychosocial risk management process. The auditors found it difficult to identify psychosocial risks because they considered these risks invisible, sensitive and intangible. Furthermore, they reported that the psychosocial risk management process appears more subjectively experienced and contextual and therefore difficult to assess. These experienced characteristics of the psychosocial risk management process had consequences for the reported findings. Nonconformities were reported only when there was a lack of documentation, and even though psychosocial risks were prevalent in most workplaces, nonconformities were not reported in the actual psychosocial working environment.

In conclusion, the municipalities experienced difficulties in translating the standards into practical audit models and the audit guidelines allow considerable room for interpretation. It is illustrated by the divergent perceptions on what might be audited and how audits were carried out and reported in the two municipalities. The difficulties of implementing the standards into practice may be reinforced by OHSAS 18001 standard provide little help in auditing the management of psychosocial risks. Thus, the results show that, compared to traditional safety auditing, psychosocial risk management auditing appears to require the development of additional audit methods and auditor competencies. Moreover, these methods and skills need to be supplemented by a more thorough understanding of the content and nature of the psychosocial risks.

7.2 Study 2: Hard Work in Soft Regulation: A Discussion of the Social Mechanisms in OHS Management Standards and Possible Dilemmas in the Regulation of the Psychosocial Work Environment

In this study we analyzed the most important standards of OHS management OHSAS 18001 and PAS 1010 focusing specifically on psychosocial risk management. The focus in the analysis was to depict possible dilemmas related to the application of international standards to the specific domain of psychosocial risk regulation. On the basis of the international literature on management standards as a type of regulation, we had a particular focus on understanding the social mechanism by which these standards work. We identified particular significant characteristics of standards in order to shed light on the implications of standardization as a regulatory tool. For example, an audit that is a basic component in standards relies on a certain type of presumably objective calculation of risk. Therefore, a certain knowledge base is created in order to carry out audits. In this manner, audits can be viewed as constitutive of the working environment that they are supposed to control.

Standards are based on ideal general de-contextualized “expert knowledge” that relates to the fact that knowledge in standards can be characterized as technical and rational and it is derived from general ideals rather than actual practice. Standards therefore transform knowledge into abstract and general rules that are generally built on mono-causal technical solutions even though the problems addressed in the management system have complex and political aspects. The tendency towards focusing on technical mono-causal knowledge may neglect issues with conflicting interests and/or knowledge that are related to power, interest and influence. Thus, the knowledge base in the standards is not reflected in the major findings of the academic research about organization and management.

We analyzed how these mechanisms are played out in OHSAS 18001 and PAS 1010. First is a short summary of the analysis of OHSAS 18001. The OHS management system in the OHSAS standard can be categorized as an abstract system with an overall focus on the registration of incidents of nonconformities and based on a knowledge base focusing on mono-causal technical incidents. This focus can be related to nonconformative behavior rather than more structural or complex problems in the working environment. The other analyzed standard, PAS 1010, is a supplement to the OHSAS standard and has been developed in 2011. Both standards are based on the PDCA rational management model but PAS 1010 expands on the specific needs for managing psychosocial risks. The analysis showed that the psychosocial risk management principles could be viewed as a significant contribution to the solutions of the shortcomings in OHSAS - i.e. not adequately addressing psychosocial risks. PAS 1010 has a broader scope by also including work organization and management and understands psychosocial risks as multi-causal or complex, subjectively experienced, dynamic and contextual. A participative approach is advocated for the entire psychosocial risk management process and the employees' professional knowledge is the foundation of prevention within the management of psychosocial risks. Finally, the psychosocial risk management process must draw on both the prevailing academic knowledge of psychosocial risk interventions to improve the psychosocial working environment, and practical local knowledge.

With regard to knowledge base and evidence, the two standards are based on different epistemology. OHSAS 18001 is, as mentioned, based on a mono-causal logic and de-contextualized knowledge base while PAS 1010 attempts to combine a technical and decontextualized knowledge base with local and contextualized knowledge. The different kinds of epistemology are reflected in which kind of evidence the methods are based upon. PAS 1010 specifies that that psychosocial risk management is a systematic evidence-informed method which may indicate something different from the term evidence-based method used in OHSAS 18001. It is not specified in the two standards, however, how the different terminology is to be understood and translated into practice.

7.3 Study 3: The Wicked Character of Psychosocial Risks: Implications for regulation

In the first study of the doctoral research, we concluded that the difficulties of auditing psychosocial risks experienced at the empirical domain may be found in both the nature of the psychosocial risks and in implementation constraints. The purpose of this study was to analyze the character of psychosocial risks as part of the understanding of the practical and theoretical challenges by including psychosocial risks in OHS management systems. We consider that psychosocial risks share many characteristics with what are termed complex or "wicked problems". Psychosocial risks are often multi-causal, contextualized, rarely directly visible, and highly political or politicized. Moreover, psychosocial risks are dependent on individual differences. The distinctive character of wicked problems therefore requires specific approaches for solutions to the problems. The choice of a definition of a problem typically determines its solution, and a participative approach can increase effectiveness in dealing with wicked problems. This approach has implications for the knowledge base. Any effort to effectively tackle wicked problems requires drawing upon broad knowledge bases, from the technical and scientific to the local and context dependent. Consequently, extensive

stakeholder involvement and shared knowledge rather than command and control may be of benefit in order to deal effectively with wicked problems.

The features of psychosocial risks have consequences for the regulation. The wicked character means that psychosocial risks cannot be controlled through specification standards and a command and control regulatory approach. The command and control approach is based on an assumption of clear cause-effect-relationships or mono-causal expert knowledge, which is most appropriate to apply when the problems have unambiguous and certain solutions or when the problems are tame. The lack of detailed specifications and the wicked nature of many psychosocial risks make psychosocial risks difficult to regulate through inspection. It is difficult for the labor inspection to assess whether the psychosocial working environment is healthy and safe. At the same time, essential parts of the psychosocial working environment are deeply rooted in the employer's prerogative, and this, in a Danish context, means that labor inspection has limited opportunities to regulate psychosocial risks through inspection.

Psychosocial risks are also difficult to regulate because of a lack of visibility. While many physical working environment factors are directly observed or measured with instruments, to assess the psychosocial working is primarily dependent on what employees and managers state in, for example, qualitative interviews or in questionnaires. Studies of what the employers and employees have experienced at work have a natural subjective character because they always reflect each person's subjective perceptions and interpretations of the working environment. The Danish Working Environment Authority has tried to solve this problem through the development of special methods to carry out inspections of psychosocial risk in Danish workplaces. Interview guidance tools have been prepared and the inspectors conduct semi-structured qualitative interviews with managers and employees. The guidance tool covers a broad range of psychosocial risk factors associated with work organization and the goal is to gather local evidence of whether psychosocial risks are properly prevented and managed. The inspectors conduct a professional assessment of the interview based on a combination of both the general scientific knowledge of the relationship between risk factors, health and prevention, and the contextual knowledge from the interviews with managers and employees. These two kinds of knowledge are subsequently compared with the legislative requirements for a healthy and safe working environment. As the psychosocial risks have the character of wicked problems, the knowledge base is accordingly expanded and more varied. The inspector cannot act as the sole expert nor can they apply only a generalized technical expert knowledge to the unique context. Assessment of compliance must therefore be developed through the explicit use of diverse sources of knowledge, and to combine different sources of knowledge in labor inspections places great demands on the inspectors' knowledge and skills.

In management systems audits, the knowledge base has, within the established audit discourse, been dominated by technical mono-causal expert knowledge used to assess whether risks are controlled with respect to regulatory specification standards and management standards. This knowledge base appears to be reflected in the process of gathering audit evidence. Apparently, in the established audit discourse, evidence is understood as something that is directly observable, either in the form of documents or as something that can be directly observed. However, in neither OHSAS nor PAS 1010 is it specified how evidence has to be understood; therefore, in principle,

statements from managers and employees could be a part of the knowledge base and the evidence in an audit. In addition, auditors could, for example, use methods similar to those used by the labor inspectors. Addressing psychosocial risks as wicked problems in inspection and audit requires specific competencies. Inspectors and auditors need to possess qualifications and knowledge of psychosocial risks, health consequences and related preventive measures, and organization and management. In addition, the inspectors and auditors should be able to discover, interpret, and assess the local managers and employees' experiences of psychosocial risks. Finally, they should be able to develop a shared problem understanding with employees and managers; otherwise, it may be challenging to implement primary interventions that should make improvement in the psychosocial working environment.

7.4 Study 4: Developing a concept for external audits of psychosocial risks in certified occupational health and safety management systems

In this study, we developed a concept for an audit methodology that is able to capture the characteristics of psychosocial risks, i.e. soft, invisible, politicized, and contextualized OHS risks. The conceptual model contains the following six basic principles for auditing psychosocial risk management:

1. Psychosocial risks are acknowledged to be of a qualitatively different nature than more traditional OHS risks, as the majority of psychosocial risks can be characterized as wicked problems. Solutions are therefore dependent on the context in which they occur.
2. Management of psychosocial risks in certified OHS management systems is understood as a social process based on dynamic and complex conditions. Solutions are influenced by diverse perspectives due to differences between management and employees at different levels in the organization and by other internal and external stakeholders.
3. Different methods can be used to create data and gain relevant and legitimate evidence, especially the use of the qualitative interview as the key tool.
4. Due to the character of psychosocial risk, it is necessary to make assessments of compliance based on a combination of decontextualized scientific knowledge and local practical knowledge. Compliance must be developed through the explicit use of diverse sources of knowledge, and the auditor has to interpret reported experiences from different perspectives, making judgments on whether the regulatory requirements have been met.
5. The assessment implies an expanded understanding of what is valid and reliable audit evidence. It is important that evidence comes from a variety of sources and that the assessment of compliance with legal and other requirements relies on both context-independent and context-dependent evidence - in other words, on global and local evidence.
6. The context-independent evidence is based on the auditor's general expertise and research knowledge. This knowledge helps to qualify the auditor's professional assessment by creating an informed basis from which auditors can assess the context-dependent evidence generated from the local context.

These principles are now further elaborated. Auditing is defined as a kind of evaluation founded on an evidence-based approach. An audit is described as a systematic, independent and documented

process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled. The approach is also clearly expressed in the key principle of auditing: that auditing is founded on an evidence-based approach characterized as the rational method for reaching reliable and reproducible audit conclusions in a systematic audit process. Although evidence is the pivotal point and a key principle, neither OHSAS 18001 nor PAS 1010 have clearly defined the term evidence. The understanding of evidence is a paradigmatic question, meaning what can be considered valid, reliable and reproducible evidence is related to ontology, epistemology and methodology. The original understanding of evidence-based approaches and methods is rooted in the biomedical field and is greatly inspired by the positivist paradigm. Within this paradigm, the focus is on effects that have cause-and-effect relationships and are therefore most relevant to simple linear problems and interventions. In addition, the focus is on directly observable facts and quantifiable data connected to the fact that the positivism approach has a flat ontology and a horizontal understanding of causality. Finally, the knowledge base or what is understood as valid and reliable evidence is based on decontextualized and global knowledge.

Based on our analysis of the established audit discourse in a Danish context, the characteristics of the OHSAS 18001 standard and the characteristics of psychosocial risks, we argue that the practical and theoretical challenges for auditing psychosocial risks are primarily due to the strong influence of the positivistic approach. This paradigm encounters difficulties with handling invisible, contextual, political and complex issues or aspects of wicked problems. Relating this point to the established audit discourse, we argue the characteristics of psychosocial risks are difficult to integrate in the traditional audit practice. In view of these challenges of addressing psychosocial risk management within the established audit discourse, we have developed a concept which is more suitable for handling the special nature of psychosocial risks in certified OHS management systems. This concept is based on the realistic evaluation model that has a scientific theoretical foundation in critical realism. Realistic evaluation has an understanding of organizations as open, social systems and is based on the mechanism-context-outcome configurations. Realistic evaluation thus provides the opportunity to integrate context-independent global knowledge with context-dependent local knowledge. This means that audits, in a realistic perspective, will have an expanded knowledge base that creates a broader understanding of what is considered valid evidence. An audit with a realistic perspective provides an analysis aimed at discerning what works for whom, in what circumstances, in what respects and how. “What works for whom” expresses the underlying mechanisms that work under the observable empirical surface. “When and under what conditions” expresses that the specific context in which the intervention takes place must be involved in the evaluation. The point of so doing is that when focusing on context, the evaluator must have access to local knowledge and experience to assess the cause of the effect.

Realistic evaluation builds on both qualitative and quantitative methods. With regard to the methods of audits of the psychosocial risk management system, it is often suitable to use qualitative interviews to obtain access to local knowledge. The qualitative interview is specifically suited for obtaining relevant, local evidence concerning the employees’ daily experience, their perception of the risk assessment, and their attitude towards reducing what they view as psychological risk. Using qualitative interviews thus provides the auditor with the opportunity to obtain statements and observe attitudes about work organization and management that have implications for the risk management process and the actual psychosocial working environment. Qualitative interviews do

not solely focus on the perspectives and experiences of management, employees, and other stakeholders. In many qualitative interviews, it is necessary to also obtain information from other sources. Because of the participatory approach, however, the information is interpreted in an organized dialogue between the interviewees and auditor.

The developed concept for audit of psychosocial risks has important implications for the traditional audit practice and auditor competencies. Because the concept leads to an expanded knowledge base and a broader concept of audit evidence, it presupposes considerable auditor resources, and changes the required knowledge base and skills of auditors. Auditors must be able to assess the quality of the various elements of the psychosocial risk management process. In this capacity, they should address an array of risks, such as work organization and management that require them to move beyond checking compliance with prescriptive standards and into territory where audit criteria and evidence are more subject to auditor judgments based on professionalism. To make professional judgments further requires that an auditor has a thorough knowledge – based on global evidence – regarding psychosocial risk factor issues, including work organization and management, preventive-organizational level interventions, and good management practice. This knowledge has to be combined with local organizational and practical knowledge from diverse sources of information and data. With respect to interviewing skills, particular competencies are required to conduct qualitative interviews and to ensure methodological objectivity. This includes knowledge of the themes to pursue in the interview process and expertise on the dynamics of the interaction between the auditor and the auditee.

The concept I have developed has to be translated and implemented into audit practice and this process involves, among other elements, the development of specific methods and tools that have to be tested systematically. In connection with the development of these methods and tools, there is a need to make clear that if certified OHS management systems audit should address psychosocial risks in an adequate manner, the employees' knowledge must be a relevant and important part of the knowledge base or evidence. In the next chapter, I discuss the results from these four studies.

8. Discussion

The aim of the PhD project was to create knowledge about what constitutes the practical and theoretical challenges of auditing psychosocial risks and, on the basis of this knowledge, to develop a concept for an audit methodology that is able to capture psychosocial risk management in an adequate manner. In this chapter, I firstly discuss what constitutes the practical and theoretical challenges of OHS management systems audit with a focus on psychosocial risks. Following this, I discuss what implications the developed concept has for the dominant audit practice and auditor competencies. The discussion is put into perspective by relating it to the newly adopted political agreement to strengthen OHS certification in Denmark. This agreement, among other elements, focuses on how psychosocial risks should be handled in certified OHS management systems and how third-party audit should be carried out with regard to psychosocial risks. Another initiative in the agreement is a requirement of specific auditor training that shall strengthen the external audit of psychosocial risks at work.

8.1 Practical and theoretical challenges of auditing psychosocial risks

Previous empirical research has indicated that, in general, OHS management systems audits have difficulties in adequately handling psychosocial risks and it is argued that these difficulties can be related to the way audits are carried out. In this research project, the results at the empirical level show that auditors with the available audit methods have difficulties in assessing the actual psychosocial working environment and in this connection to use the most important audit tool e.g. “nonconformity”. In the established audit discourse, there is primarily a focus on documented and visible aspects and because of the character of psychosocial risks as “invisible”, it was difficult for the auditors in practice to indicate nonconformities in the actual psychosocial working environment.

The key principle of auditing is founded on an evidence-based approach; however, it is not explicitly reported in OHS management system standards or in the guidelines for auditing management systems, that only directly observable evidence can be the basis for indicating conformities or nonconformities. One important issue to discuss is therefore why there is a tendency in the dominant audit discourse that only nonconformities which are based on directly observable evidence can be understood as valid and reliable evidence. Presumably, the dominant audit discourse can be connected with the certification bodies’ interpretation of what can be understood as objective audit evidence and how to gain objective evidence. The general guideline for auditing management systems is unclear as to what paradigm the audit principles are based, which is particularly reflected in the unclear description of what count as objective evidence. Therefore, the certification bodies have considerable room for interpretation of what they in practice may think is objective audit evidence. Perhaps the certification bodies have developed an understanding of nonconformities as being directly observable, because audit practices have been developed in the industry where the focus has just been on the directly observable.

The understanding of what is valid and reliable evidence and how it can be provided is a paradigmatic question. From the dominant audit practice, it appears that the established audit discourse is very much inspired by the positivist paradigm that is founded on a flat ontology,

contextualized knowledge and clear cause-and-effect relationships. When transforming this positivist paradigm into audit principles, it implies that the evidence required for indicating nonconformities has to be directly observable in order to be considered as objective evidence. An interpretation of the audit principles as heavily inspired by the positivist paradigm fits well with more traditional audits, but tends to have implications for the auditing of psychosocial risks in certified OHS management systems. The nature of psychosocial risks as "invisible" and contextualized does not fit into the positivist paradigm in which valid evidence has to be directly observable and based on decontextualized knowledge.

An interpretation of psychosocial risks is always dependent of the context in which they occur. The context has a decisive influence on both the problems and the solutions; knowledge of the intervention and effects will therefore also be contextual. Should it therefore be possible to indicate nonconformities in the actual psychosocial working environment, it will also require contextual knowledge that will further require an expansion of what is understood as objective audit evidence. In other words, it is difficult to indicate nonconformities in the actual psychosocial working environment because the traditional audit practice is primarily founded of a decontextualized knowledge base. To remedy the present practical and theoretical challenges of auditing psychosocial risks, I have developed a concept that is able to cover psychosocial risk management in a suitably comprehensive manner. This audit concept can be used as a regulatory instrument of psychosocial risks and has implications for the established and dominant audit discourse, an issue to which I will now turn.

8.2 The audit concept with a focus on psychosocial risks and implications for the dominant auditor discourse

The developed audit concept for audits of psychosocial risks in certified OHS management systems builds upon realistic evaluation principles that have a scientific theoretical foundation in critical realism. Because of the nature of psychosocial risk, it has been relevant to base the developed concept on a different paradigm than the positivist. The realist paradigm has an evidence-based approach as does the positivist paradigm, but is founded on a deep ontology, contextualized but transferable knowledge, and unclear cause-effect relationships. When transforming the realist paradigm into audit principles, it implies that conformities or nonconformities can be indicated in the actual psychosocial working environment, as they are real at the deep level, even if they are not directly observable on the empirical one. Thus, with a broader knowledge base and evidence concept, it appears that psychosocial risks could be covered in certified OHS management systems audit in an appropriate manner. However, this will require changes in the established audit discourse.

In the traditional audit practice, it is reported that, primarily, there is a focus on technical accident risks, to some extent on physical risks and seldom on psychosocial risks. This focus pattern can be connected to the dominance in OHS management systems of a technical-rational decision-making approach, reflected in the PCDA model, and in the command-control regulatory approach. The command-control regulatory approach is based on clear cause-effect relationships, for instance tame problems, and a decontextualized knowledge base which rarely applies to the nature of psychosocial

risks and correspondingly interventions to improve the psychosocial working environment. To regulate psychosocial risks through an audit must therefore rely on the Working Environment Act requirement that the employer must ensure a safe and healthy working environment, however, such broadly formulated requirement constitutes a challenge for the auditors to assess whether the psychosocial working environment is appropriately safe and healthy. The lack of regulatory specification standards and the complex or wicked character of psychosocial risks requires that the auditor gathers local and contextual knowledge to assess whether the various elements in the psychosocial risk management process is properly managed and whether employers are complying with the law with regard to ensuring a safe and healthy psychosocial working environment. Because of a lack of specification standards, the assessment of compliance will be based on professional judgment which consists of diverse sources of knowledge, namely the subjective knowledge and contextual knowledge of employers and employees as well as the generalized knowledge of what constitutes psychosocial risks. To make professional judgments may therefore result in a change in the auditor role. The auditor still needs to have expert knowledge but cannot act as the sole expert when indicating nonconformities in the actual psychosocial working environment. Because of the wicked character of psychosocial risks, indicating nonconformities will require a shared problem understanding with management and employees in the workplace.

8.2.1 Developing national guidelines for auditing management of psychosocial risks

The principles for auditing management of psychosocial risks have to be translated in order to be adopted and implemented in the audit practice. This translation may take place when the political agreement of strengthening OHS certification in Denmark has to be implemented. It is reported in the political agreement that the guideline must both describe how enterprises can incorporate prevention and handling of psychological risks in the management system and how external audit should be carried out. In connection with developing the national guideline, it is important to decide both what psychosocial risks are included in the audit and what methods can be used to create data and gain relevant and legitimate evidence. All typical psychosocial risks should, in principle, be included, along with the risks related to the prerogatives of management, since the focus in auditing is explicitly on the management of psychosocial risks. Thus, there should not be any limits in relation to regulation of the psychosocial risks through the OHS management systems audit compared to regulation of psychosocial risks through authority inspection. Due to the employer's prerogative, the Danish authorities have strict limitations on those psychosocial risk factors that inspectors are allowed to address.

Particular challenges in relation to the established audit discourse will be to develop and implement a national guideline for indicating and resolution of nonconformities. The guideline should therefore formulate both how nonconformities can be understood with regard to the actual psychosocial working environment, and how the certification bodies have to review and assess the cause analysis of nonconformities and the corrective action to eliminate the cause(s) of a detected nonconformity. When nonconformity is indicated by an external auditor, the enterprises have to take corrective actions to prevent recurrence and the external auditor shall review the identified causes and corrective actions submitted by the enterprises to determine if these are acceptable. This process

may not be difficult when nonconformities are indicated within the established audit discourse in which the specification standards approach tends to dominate. In this approach, nonconformities can be categorized as simple or tame problems with clear cause-effect relationships. It is therefore possible to identify unambiguous and effective solutions and the external auditor only needs to draw on technical, mono-causal expert knowledge, or in other words, the knowledge base is decontextualized. Because of the nature of psychosocial risks, the solutions are not just technical but socially dependent with no clear cause-effect-relationships. It may thus be challenging for the external auditor to assess the cause analysis of nonconformities and determine whether the specific corrective actions taken or planned to be taken to eliminate the nonconformities, are acceptable and effective.

A further difficulty with respect to eliminating the nonconformities in the actual psychosocial working environment would be to implement the corrective actions within the three months that is defined by the certification bodies as the typical deadline. The idea to implement effective solutions within three months may prove appropriate when the problems are simple and therefore do not require much involvement of various actors at the workplace. There are rarely quick-fix solutions when it comes to improving the psychosocial working environment. In the case of problems in the psychosocial working environment that would often be closely related to work organization, management and organizational context, it may therefore be difficult, with a deadline of three months, to implement corrective actions and verify the effectiveness. In the national guideline, it is thus crucial to concretely describe what has to be done in the workplace before nonconformities in the actual psychosocial working environment can be regarded as “closed”.

Adoption and implementation of the developed audit concept has, in addition to implications for the dominant audit practice, particular implications for the role and competencies of the auditor, as will now be discussed.

8.3 The audit concept with focus on psychosocial risks and implications for the auditor competencies

To conduct an audit on the basis of the developed audit principles requires additional knowledge and skills compared to the traditional safety audit. Auditors typically have a techno-legal background and are generally experienced in checking compliance with regulatory specifications standards. However, the psychosocial risks are, because of their nature, regulated by the broad requirement of employer’s responsibility to ensure safe and healthy conditions and it places great demands on the auditor’s competencies to assess compliance with these standards. First, in the process of auditing psychosocial risk management, the auditor has to collect evidence from different data sources by obtaining access to local knowledge of the different perspectives on the management of psychosocial risk at the workplace. The next step is to make professional judgments based on a combination of decontextualized scientific knowledge and the local practical knowledge. To make judgments based on professionalism thus requires a thorough knowledge of psychosocial work environment issues acquired through education and continuous training. The developed concept proposes the use of the qualitative interview as a key tool for creating data and obtaining evidence. Qualitative interviews with managers and employees are not the typical tool for gathering evidence in the traditional audit practice; therefore, besides the development of additional knowledge it is

necessary to develop additional auditor skills. The auditors should be trained in conducting qualitative interviews and interpreting them to gain valid and reliable evidence.

In the political agreement of strengthening certified OHS management systems in Denmark there is also a focus on auditor competencies. One of the initiatives in the political agreement concerns the increased requirements for external auditors with regard to the psychosocial working environment and these requirements should be met through training. The overall purpose of the training is to enhance the quality of audits of psychosocial working environment including the framework and the methods to identify problems in the psychosocial working environment by interview tools. In the political agreement, it is only the purpose that is specified, however, and how extensive a time period the training should encompass. When the training is planned, it is therefore important to discuss what level of skill the auditors should possess when they have completed the training. If the training should have a substantial effect on the quality of auditing management of psychosocial risks and not only superficial significance, it is necessary to allocate sufficient time for this comprehensive issue. The auditors have to learn about psychosocial risk factor issues including work organization and management, preventive organizational level interventions and good management practice. The auditors should also be trained to conduct qualitative interviews. In other words, to discover, interpret and assess the local knowledge experienced by managers and employees and to make assessments of compliance based on a combination of this local knowledge and decontextualized scientific knowledge. Another important issue to include in the training is how to interpret from qualitative interviews, and particularly how to formulate nonconformities in the actual psychosocial working environment. The nonconformities require corrective actions in the workplaces; therefore, the auditors also have to be trained in assessing the quality of the cause analysis of the nonconformities and verifying the effectiveness of these actions.

To conclude, the national initiatives adopted generally appear to contribute towards developing audits to cover psychosocial risks in a qualified manner. This is reflected in the need to develop additional methods and tools to deal with the psychosocial working environment in a certified OHS management audit and the need to strengthen the auditors' qualifications to apply these methods. It is to be hoped that developed audit principles in this dissertation can enter into these national initiatives and contribute to influencing the established audit practice.

8.4 Research limitations

Generally and overall, limited knowledge exists concerning auditing as an instrument in the regulation of psychosocial risk factors. Only a limited number of empirical studies have been conducted on the possibilities and limitations associated with the use of audits as regulatory instruments in relation to psychosocial risk factors. Neither is there extensive knowledge concerning the regulation of psychosocial risk factors, as it is an emerging field with few published papers. Overall, this means that the results and conclusions of this dissertation will tend to be of an exploratory nature.

The first study, on which this dissertation is based, being a case study, has certain limitations. The empirical results are limited to two municipalities in Denmark, and the study examines only OHSAS

18001-certified organizations located in Denmark; in another context, the results could very well be different. Moreover, the conclusions drawn from this study are preliminary, due to the obviously exploratory nature of the qualitative study methodology. As the findings from this study are limited to two municipalities in Denmark, there may be a potential bias related to the limited selection of audits or participants, and in so far as there is likely to be more variation in practices in other public or private organizations, it would be an advantage to have had more studies of internal audit practices.

The study that deals with the regulation of psychosocial risk factors has a focus on regulatory instruments of authority inspection and OHS management systems audit. However, the results and conclusions overwhelmingly draw on regulation by authority inspection, as there are still no empirical studies that examine the implications of regulating psychosocial risk factors through voluntary OHS management system standards.

This dissertation presents a concept for external audits of psychosocial risks in certified OHS management systems. As the concept presented here has not been tested in practice, we do not know whether, or how, the concept would actually work in practice. Consequently, there is a need to develop and test methods and tools to complete the concept and thereby make it more operational.

It would have been advantageous to conduct further empirical studies where certified workplaces were followed over longer time. This was, however, not possible within the scope of the study, partly because it turned out that the research literature on the certification and auditing of psychosocial working environments is very limited. Therefore, it was necessary to prioritize a theoretical explanation of the subject with which the dissertation deals. For the same reason, it was not possible to test the audit concept, in practice, even though it would have been relevant.

8.5 Implications for research

The results of this thesis have raised many questions in need of further investigation. It is self-evident that the issue of 'regulation of psychosocial risks through OHS management system auditing' calls for more research. First of all, more empirical studies of internal and external audit practices are needed. In this context, we need to know considerably more about the implications of viewing psychosocial risks as wicked problems for the regulation of psychosocial risks through OHS management system standards. There is also a need for more knowledge concerning the implementation of the two new voluntary standards PAS 1010 and the National Standard of Canada: 'Psychological health and safety in the workplace – Prevention, promotion and guidance two staged implementation '. These two new standards focus in particular on regulation of psychosocial risks and, in theory, they take into account the specific features of psychosocial risks. Conversely, both standards are based on the PDCA decision-making model which encourages a linear and mono-causal risk management approach, which does not easily fit into the nature of psychosocial risks. Research is therefore needed to investigate the PDCA model's applicability to complex problems and interventions. It is relevant to undertake empirical research and investigate whether, and to what degree, the regulation of psychosocial risks through these standards may help make the management of psychosocial risks more effective.

In relation to strategies for regulating psychosocial risk factors, we need further knowledge about the implications associated with regulating psychosocial risks through authority inspection and OHS management systems audit. Finally, research is needed in regard to how the audit concept with a focus on psychosocial risks works when it is implemented into practice.

9. Conclusion

The purpose of an audit is to produce valid and reliable knowledge (evidence) on whether the system meets the defined requirements, including complying with the legislation, is implemented in accordance with the management principles of the OHS standard, and is effective in identification, prevention and management of OHS risks. The PhD study demonstrates it is difficult to implement and audit management systems with a focus on psychosocial risks. This results in significant variations in audit practice and these difficulties can be found in both the nature of psychosocial risks and in implementation constraints. The difficulties experienced at the empirical domain tend to be constituted by the nature of psychosocial risks and by challenges with the adaption and translation of audit principles into practical audit models. Psychosocial risks have characteristics of "wicked problems"; however, the OHSAS standard does not distinguish between different types of OHS risk, which implies that the management systems standard presumes psychosocial risks can be addressed like any other OHS risks. The OHSAS 18001 standard understands OHS risks as technical, mono-causal, objective and measurable. This means that the standard treats psychosocial risks as tame problems in the decision-making process.

The assumption of psychosocial risks as tame problems has led to difficulties in addressing psychosocial risks in certified OHS management systems. To remedy the shortcomings in OHSAS 18001, two standards focusing specifically on regulating psychosocial risks have recently been developed. These new standards are compatible with OHSAS 18001, but they expand on the understanding and management of psychosocial risks. The management principles have a participative approach and include work organization and management. Psychosocial risks are understood as multi-causal, complex, contextual and dynamic. In other words, psychosocial risks reflect competing values, diverse perspectives and differing perceptions among managers and employees and other relevant stakeholders at the workplace. To manage this complex nature of psychosocial risks effectively requires a broad knowledge base, from decontextualized and general scientific knowledge to local and contextualized practical knowledge. Drawing on various sources of knowledge has consequences for what is being understood as valid evidence in an audit context.

The motor or the energy of the audit is nonconformities. This means that nonconformities from the predefined audit criteria are the entire motor driving the standardization perspective. Nonconformities are based on evidence but the concept of evidence is neither clearly defined in the standard for management systems audit, nor it is clear what paradigm the audit principles are based upon. In the established discourse audit, however, nonconformities tend to be indicated only if they can be directly observed. Nonconformities thus tend to rest on positivist ontology and positivist epistemology. Audit evidence in the established audit discourse tends to be based on global decontextualized knowledge, which offers a narrow knowledge base. Research reports that organizational interventions to improve the psychosocial working environment require considerable participation and different sources of knowledge, i.e. the knowledge base has to consist of both scientific decontextualized knowledge and contextualized practical knowledge. Therefore, to include management of psychosocial risks in auditing requires an expansion of the knowledge base which in turn will affect what can be understood as valid audit evidence.

To qualify audits of OHS management systems, including psychosocial risks, we have developed a concept for an audit methodology that can capture an expansion of the knowledge base and a broader understanding of evidence. The concept is based on a characterization of the majority of psychosocial risks as wicked problems and, correspondingly, complex interventions, the psychosocial risk management principles in PAS 1010, and the realistic evaluation paradigm. Drawing on critical realist evaluation helps us to better understand the invisible, contextualized psychosocial risks based on unclear causal relationships and deep ontology rather than the flat positivist ontology based on linear causal relationship and direct observable issues dominating in the established audit discourse. Realist evaluation provides the opportunity to integrate context-independent global knowledge with context-dependent local knowledge and both quantitative and qualitative methods can be used to create data. This means that the developed concept recognizes that relevant evidence can be derived from a variety of sources and auditing with a realist approach thus implies an expanded understanding of what is valid and reliable audit evidence.

The developed concept has implications for the established audit discourse and auditor competencies. Within a realist approach, psychosocial risk management audit has to be based on global and local knowledge, and a suitable method to create local knowledge is through interviews. The context-independent global knowledge is based on the auditor's general expertise and research knowledge. Knowledge and skills development should therefore be undertaken to improve auditors' qualifications in assessing and evaluating psychosocial risks as well as the psychosocial risk management process. This upgrading of competencies must include a description of methods for the auditors along with guidelines on the kind of methods to use and how to use them when auditing management of psychosocial risks in certified OHS management systems.

The developed principles should be implemented into audit practice, including preparation and testing of guidelines and tools, and there will also be a need to evaluate the developed concept. This evaluation has to investigate whether the audit principles on which the concept is based can be turned into an effective instrument for regulating psychosocial risks in practice. With regard to research, there is a need for further research into how the audit principles based on the management principles in PAS 1010 and building on realistic evaluation and qualitative interviews can make psychosocial risk management more auditable in practice.

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Internal audits of psychosocial risks at workplaces with certified OHS management systems

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ABSTRACT

Psychosocial risks are widely recognized as a major challenge at work, a challenge that most organizations find difficult to manage in practice. The OHSAS 18001 standard provides a framework for the management of occupational health and safety risks, including psychosocial risks. However, such occupational health and safety management (OHSM) systems tend to have difficulties in adequately addressing psychosocial risks at work. A crucial element in the OHSM system is internal audits. We have investigated how two Danish municipalities have transformed the general audit guidelines into internal audit practices capable of targeting the psychosocial risks. The results show that the municipalities experienced difficulties in transforming the general audit guidelines into practical models, and we found that this led to significant variations in audit practices. The explanation for these difficulties can be found both in the nature of the psychosocial risks and in implementation constraints. Compared to traditional safety audits, auditing psychosocial risks appears to require different methods and auditor competencies, a factor that the OHSAS 18001 standard does not explicitly take into account. On the basis of our study, we reach two major conclusions: first, that the standard provides little help in auditing the management of psychosocial risks in relation to OHSM systems; and second, that the full potential for management of psychosocial risks cannot be achieved without developing additional methods and auditor competencies for audits of psychosocial risks.

1. Introduction

The voluntary occupational health and safety management (OHSM) systems standard OHSAS 18001 has gained considerable worldwide acceptance in the past decades (Fernandes-Muniz et al., 2012; Frick and Wren, 2000). The OHSAS 18001 standard specifies requirements for an OHSM system that should enable an organization to control all its OHS risks and improve its OHS performance (OHSAS 18001, 2008). OHSM systems have the possibility to be certified according to the OHSAS standard, and auditing is considered to be a crucial component of the OHSM system (Robson et al., 2012).

Although the OHSAS 18001 standard claims to control all OHS risks, the standard does not explicitly address psychosocial risks. Moreover, the standard is reported to have difficulties in adequately addressing psychosocial risk factors at work in practice (Leka et al., 2011; Hohnen and Hasle, 2011; Frick and Kempa, 2011; Abad et al., 2013). Prevailing literature suggests that psychosocial factors are seldom the main target in certified OHSM systems (Robson et al., 2012; Gallagher and Underhill, 2012). The OHSM systems certified according to OHSAS 18001 tend to focus on objectively measureable and easy-to-see-issues, causing a bias toward the safety and physical risks by which 'conformity' or 'non-conformity' with the requirements can be more easily assessed. Consequently, other aspects, especially psychosocial risks, tend to be neglected (Hohnen et al., 2014; Hohnen and Hasle, 2011), and research suggests that the difficulties may be tied to the manner in which internal and external audits are carried out (Hasle and Zwetsloot, 2011).

Prevailing research on OHSM systems has focused mainly on the macro-level (Frick and Wren, 2000; Robson et al., 2007) and to a smaller extent on the *external* audits now being carried out by the certifying bodies (Blewett and O'Keffe, 2011; Robson et al., 2012). Consequently, there is a lack of knowledge about how the

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OHSAS 18001 standard is applied at the workplace level, where *internal* audits carried out by local work environment specialists play an important role. To our knowledge, the literature on internal audits of psychosocial risks is limited to a recent study of a pilot test of a method to carry out internal audits (Bergh et al., in press). This article fills that gap by analyzing the content and form of internal audits in two Danish municipalities, both of which have sought to include psychosocial risks in their OHSM systems. Based on these two case studies, the article aims to investigate how certified organizations transform general audit guidelines into internal audit practices covering psychosocial risks. Furthermore, we describe the challenges that emerge when applying audit of OHSM systems in the psychosocial risk area.

We begin the article by describing the state of the art, including characteristics of the OHSAS standard, the principles of OHSM system auditing, and the particular features of psychosocial risk factors. This is followed by a presentation of methods and data. In the subsequent empirical analysis, the challenges for implementation of internal audits in two Danish municipalities are analyzed. Here we show how the standard offers little guidance for this process and how this results in a system which does not fully utilize the potential of the OHSAS 18001 standard.

2. Background

2.1. The OHSAS 18001 standard

The OHSAS 18001 is a standard that specifies requirements for OHSM systems in order to enable organizations to develop objectives and to achieve those objectives by controlling its OHS risks. The overall aim of the standard is to support and promote good OHS practices. An OHSM system consists of interrelated elements used to develop and implement an organization's OHS policy and manage its OHS risks. Such elements include organizational and responsibility structures, setting of objectives, hazard identification, risk assessment, procedures, processes and resources (OHSAS 18001, 2008). The OHSAS standard is like other management system standards based on the methodology known as 'Plan-Do-Check-Act': Plan: establish the objectives and processes necessary to deliver results in accordance with the organization's OHS policy; Do: implement the processes; Check: monitor and measure processes against OHS policy, objectives, legal and other requirements and report the results; Act: take actions to continually improve OHS performance. The system developed by an organization is subject to internal and external audits in order to establish whether the requirements of the standard are being fulfilled; however, the standard does not establish absolute requirements for OHS performance (OHSAS 18002, 2009).

2.2. Principles of auditing

An audit is a tool for assessing a management system, in this case an OHSM system. An audit is an objective evaluation of the system intended to determine whether the OHSM conforms to the requirements of the OHSM system standard and is effectively meeting the organization's policies and objectives (OHSAS 18002, 2009). The ISO 19011 (2011) standard provides the general principles and methodology for audits of management systems and the competences needed by an auditor. The principles and methodology described in ISO 19011 are recommended for audits of OHSAS 18001 systems.

OHSM system audits are based on a rational and evidence-based approach. An audit is defined as a 'systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled' (OHSAS 18001, 2008). Audit criteria may be policies, procedures, standards and other requirements, and evidence is defined as information that is relevant to the audit criteria. Audit findings are the results of the assessment of the collected evidence against audit criteria. These findings can indicate either conformity or nonconformity with the audit criteria and form the essence of the audit feedback (ISO 19011, 2011). Thus, nonconformity is non-fulfillment of a requirement, and nonconformity can be any deviation from OHS policies, legal requirements, work standards, procedures, practices and OHSM system requirements (OHSAS 18002, 2009).

The overall audit process is divided into two parts: managing an audit program and performing an audit. The management system standard requires an organization to establish an audit program that includes all activities necessary for planning, organizing and conducting the audits (OHSAS 18001, 2008). Essential elements in an audit program include recruitment, training, and evaluation of internal auditors, provision of resources necessary to manage and perform audits, definition of the objectives and criteria for audits, and selection of the audit methods. Typical activities are preparing the audits, conducting document review, conducting the audit, preparing and communicating the audit report, and completing the audit. The process of conducting an audit includes collection of evidence through interviews, observation and document review. It is followed by an evaluation of the collected evidence against the audit criteria in order to derive the audit's findings, which are then used for drawing conclusions and reporting the results (ISO 19011, 2011).

2.3. Implementation of management system standards and audits

Research in the implementation of OHSM systems has grown in recent years (Boiral, 2012; Robson et al., 2012; Fernandes-Muniz et al., 2012; Blewett and O'Keffe, 2011; Hohnen and Hasle, 2011; Power and Terziovski, 2007; Poksinska et al., 2006; Gallagher et al., 2003). The literature points out that OHSM systems standardize certain processes within organizations (Brunsson et al., 2012), and that the standardized systems are concerned primarily with procedures and presentations and refer only to a limited extent to the work environment itself. Rather, they refer to the procedures that organizations should develop for dealing with the work environment (Brunsson and Jacobsson, 2000; Brunsson et al., 2012). OHSAS 18001 presents an understanding of risks as measureable, decontextualized, and mono-causal; these risks are conceptualized such that they can be observed, assessed and managed in an objective and technical manner (Hohnen et al., 2014). Furthermore, the standard has a rational perspective on organizations (Nielsen, 2000) embodied in the following principles: organizations are manageable units, measureable objectives are used, processes are clearly defined, management exercises control, and there is on-going documentation of each process (Furusten, 2000). In principle, management standards are universal, and these standards do not claim to indicate how these principles are to be implemented. The standard stresses that 'principles and requirements are what is standardized', while implementation, on the other hand, 'is unique to each situation' as it is regarded in terms of local conditions that vary from case to case (Furusten, 2000). The standard states 'what' has to be done, but not 'how' it should be achieved. Hence, organizations have considerable interpretation possibilities in how they implement OHSM systems and auditing in practice (Robson et al., 2012; Boiral, 2012).

2.4. Particular features of psychosocial risks

Psychosocial risks have a different constitution compared to safety and physical risks that often are directly observable and

measureable. As a product of social interactions, psychosocial risks cannot be understood without describing the context of which they are a part. They can typically be characterized as invisible, dynamic, complex and intangible, often without a clear and definitive solution (Hohnen and Hasle, 2011). The psychosocial work environment is an important part of how people interact with one another on a daily basis. It is a part of the way working conditions and management practices are structured and the way decisions are made and communicated. Hvid et al. (2011) divide the concept 'psychosocial work environment' into three categories: (1) the organization that focuses on the quality and content of jobs, work organization, and technologies in use; (2) relationship that is about leadership and social relations; and (3) the individual who is connected to stress and the personal attitudes.

Unlike the traditional OHS risks, psychosocial risks are determined wholly or partly by the way in which people perceive them (Rick and Briner, 2000). Hence, the level of the risk will differ from one person to another. Another particular feature of psychosocial risks is the lack of clear dose–response relationships, which makes it difficult to establish standards for good and bad psychosocial work environment (Johnstone et al., 2011). Moreover, psychosocial risks are related to power, leadership and organization of work. Hence, it touches on the management's prerogative (Hohnen et al., 2014) and is therefore a sensitive issue for regulation (Bruhn and Frick, 2011).

Many organizations find it difficult to manage psychosocial risks (Langenhan et al., 2013). One important reason can be a lack of knowledge in organizations when it comes to problem-solving and best practices within the area of psychosocial risks (Johnstone et al., 2011). However, the difficulty also relates to limitations on the management, measurement and assessment of psychosocial risks in an objective and technical manner (Leka et al., 2011; Rick and Briner, 2000).

The particular features of psychosocial work environment have clear implications for audits of certified OHSM systems. The rational approach to OHS management is to direct the audit toward the formalized, documented and visible aspects of the organization. However, a focus on these formalized and visible aspects may conceal the psychosocial risks, these being relational and subjective, and therefore less directly visible than other types of risks. This makes it necessary to focus on informal and covert aspects (Gallagher and Underhill, 2012; Rasmussen et al., 2011). The question, therefore, is how to carry out audits that can ensure that the most important psychosocial risks are identified and the level of their management control assessed.

3. Methods and material

Danish municipalities provide a wide range of welfare services, such as child care, primary schools, social benefits and employment, elderly care and provision of technical infrastructure. Most of the work is dominated by social relations between employees and citizens and other relations that potentially create psychosocial risks, such as harassment and emotional overload. In addition, the Danish public sector has for the last decade been marked by budget constraints that have resulted in restructuring, intensification of work and insecure working conditions (Kamp et al., 2013). These potential risks imply that the psychosocial work environment must have a high priority in OHSM systems in municipalities, and they can thereby constitute a 'critical case' (Flyvbjerg, 2006). We have therefore selected two Danish municipalities that have been operating with a certified system for the past seven to nine years. This extended period of operation has ensured that we could study the actual practice of internal audits and not simply a temporary implementation phase. Finally, an important criterion for the selection of these two municipalities was the possibility of access, as these two municipalities are third party audited by Bureau Veritas, where one of the researchers is employed. It is important to note that in order to prevent a potential conflict of interest, we have studied only internal audits in which the certification bureau was not involved.

Danish employers are required to carry out a risk assessment as least every third year. In the two municipalities studied, compliance with this requirement has resulted in two risk assessments: one for physical risks and one for psychosocial risks. Both assessments are included in their OHSM system as a means of fulfilling the requirements for risk assessment in the OHSM system standard. All risk assessments and audits therefore fulfill both the Danish legal requirements as well as the requirements set by the standard. The risk assessment of psychosocial risks is carried out as a survey of psychosocial factors and well-being. The national authorities in Denmark have included the OHSAS 18001 standard in its legislation, whereby private and public workplaces with a certified OHSM system are exempted from regular labor inspection.

The two municipalities conduct external audits of all workplaces every sixth year. The audits are implemented according to a plan whereby one-sixth of the workplaces are audited each year. Although the external audits have not been studied in this paper, the external audit reports were used as background data by the internal auditors. In the years between the external audits, the municipalities must carry out internal audits.

We have selected internal audits as a challenging type of audit so that the consequences of the psychosocial work environment features could be as visible as possible. Data collection was designed in order to answer the following questions:

- How are the requirements in OHSAS 18001 translated into practical tools for internal audits of the psychosocial work environment at the workplace?
- How are psychosocial work environment issues being addressed in practice in internal audits?
- What barriers and possibilities have auditors and other stakeholders experienced in relation to internal audits of the psychosocial work environment?

3.1. Data collection and analysis

The data collection in the two municipalities, which we call 'Unify' and 'Diversify', included observation, interviews and collection of documents. Four internal audits with specific focus on psychosocial work environment were observed. We started our observations by observing how the auditors planned the actual audit exercise. Subsequently, we followed the conduct of the audits, and finally we participated in follow-up meetings between all auditors involved in the particular audit round. Detailed notes were taken from these four observations. We also analyzed the internal audit reports written by the lead auditors. Our focus in both the observations and document analysis was on how the audit of the OHSM systems covered psychosocial risks in the workplaces, i.e. what kind of psychosocial work environment topics were taken up by the internal auditors; the kind of audit criteria that guided the internal auditors; and what findings were reported. In Unify Municipality, we observed audits at the two elder care facilities, which we call the 'Hannah Elderly Care Centre' and 'Mary Elderly Care Centre'. In Diversify Municipality, audits were observed at the 'Oliver Elderly Care Centre' and at the 'Vincent Primary School' (all pseudonyms).

Besides observations, we conducted qualitative, semi-structured interviews with the managers of the audit program in the two municipalities and with six internal auditors, whom we

designate as auditors 1 through 6. The interviewees were selected in collaboration with the managers and stratified according to varying auditor experience and educational backgrounds, especially covering both OHS professionals and non-professionals. Interview guides were prepared for each interview group. For the interviews with the managers of the audit program, the questions focused on how they interpreted the standards and guidelines at the municipal level and subsequently, on how the audit models were designed in the two municipalities. The interviews with internal auditors covered methods for planning and conducting audits and difficulties encountered in audits of the OHSM systems with a focus on psychosocial risks. In this context, audits methods are understood as both the overall concept for the tools, techniques and reflections on practices and as the actual conduct of actual audits. Each interview lasted from 90 min to two hours, and all the interviews were recorded and transcribed.

Documents from the two municipalities were used for the analysis of how they had translated the general requirements of audits into local formal audit models and practices. The documents consisted of internal audit reports, audit agendas, audit interview schedules and checklists, lists of meeting participants, agendas and minutes, audit plans, and audit programs.

The data were analyzed using a qualitative and inductive approach based on content analysis (Yin, 2003) and grounded theory (Strauss and Corbin, 1998). The main categories identified through the analysis of the data covered the municipalities' similarities and differences with regard to audit models, the psychosocial work environment issues that were addressed and not addressed in audits, the specific audit findings reported, and the difficulties of auditing psychosocial risks. Moreover, we use the different ways of auditing OHSM systems targeting psychosocial risks to gather new understandings of the possibilities for addressing these issues in internal audits. As recommended in qualitative research (Maxwell, 2012; Yin, 2003), the validity of the analysis was supported by the use of a variety of sources and methods: direct observation, qualitative interviews and internal and external documentary information.

As the findings from this study are limited to two municipalities in Denmark, there may be possible bias related to the limited selection of audits and participants, in so far as a larger variety of practices are likely to exist. This study focuses on OHSAS 18001 certified organizations located in Denmark, so the situation may certainly be different in other national contexts. Furthermore, the conclusions drawn from this study are preliminary, due to the exploratory nature of the qualitative study methodology. Further research is needed to validate our results.

4. Results

In the following, we describe the findings. Firstly, the two internal audit models are described. Then, we analyze how auditing of psychosocial risks is carried out in practice, including a discussion of the similarities and differences between the two municipalities.

4.1. The internal audit models

4.1.1. Case UNIFY

UNIFY is a large Danish municipality with more than 100,000 inhabitants. The OHSM system has been certified since 2008. Most OHS activities are built around a central IT system. The OHSM system in the municipality has a centralized character, where local workplaces are instructed to apply central policies and procedures and where their degree of compliance is closely monitored by the central OHSM unit. There is a clear emphasis on systematic procedures with registration and documentation of local practices that are monitored using surveys of well-being, risk assessments and action plans. These data are fed into a central data base. Internal audits at the workplaces are also expected to follow central and standardized guidelines, and efforts are put into developing and maintaining a certain degree of inter-auditor consistency. The municipality emphasizes standardized rather than contextual procedures and reports in the IT system in order to demonstrate that the proper procedures have been followed. Occupational health and safety is integrated in a central HR department, and an OHS professional is responsible for the OHSM system and the audit program. The municipality conducts surveys of well-being every year and OHS risk assessment of physical risks at a minimum of every third year. The survey results are used as the risk assessment of psychosocial risks and serve as a point of departure for the internal audits.

It is emphasized by the manager of the audit program that the audits check system compliance and effectiveness and in addition, place emphasis on making sense and giving inspiration to local workplaces for improvement of their activities. The municipality conducts internal audits of all workplaces every fourth year. Two types of internal audits are conducted: a standard audit including both traditional and psychosocial risk and a specific audit with particular focus on psychosocial risks. The psychosocial work environment has been specifically included in the internal audit since 2013.

4.1.2. Case DIVERSIFY

DIVERSIFY is a medium-sized Danish municipality with approximately 50,000 inhabitants. The OHSM system has been certified since 2006 and is characterized by a combination of central and local consultation. The municipality has chosen to establish just a few centralized procedures and limited central reporting and control. Hence, each department has a large degree of autonomy in the implementation of OHS strategies and measures. Occupational health and safety is part of a central HR department, and there is an OHS professional responsible for the OHSM system and the audit program. The municipality conducts surveys of well-being every three years and risk assessments at least every third year as well. There is a low degree of coordinated monitoring of the results of the risk assessment, and performance is not stored digitally or systematically in the municipality. The external auditors have recommended more formalized procedures and control, and the municipality has now decided to implement a central IT system in the coming years.

A key priority is local participation, both in decisions on the main OHS issues to address at the workplaces and in the monitoring methods to be used. Local audits are based on a general guideline, but the guideline is very general and in each case is adapted to local workplace by the auditors in cooperation with the workplaces. The idea is to focus the internal audits on substance and not on formalities and documentation. The municipality carries out internal audits of all workplaces every third year. There are two kinds of internal audits in the municipality: a general audit that includes traditional work environment issues and an audit with specific focus on psychosocial work environment and well-being. These specific audits have been conducted for the last few years. The municipality stresses that the workplace should benefit from value-adding audits with a focus on dialogue and reflection and guidance, so as to improve the psychosocial work environment.

4.2. Auditing psychosocial risks in practice

The analysis of the audit practices begins with a description of the kinds of psychosocial work environment issues that were raised by the internal auditors. We then discuss the proposals for

improvements and remedies offered by the auditors. Finally, we highlight the difficulties faced by managers and auditors when they included psychosocial risks in their internal audits. A comparison of the two municipalities in the purpose, planning and conducting of their internal audits is shown in Table 1.

4.2.1. Psychosocial work environment issues and audit criteria

There were major differences between the two municipalities regarding the issues addressed during the audits. UNIFY tended to focus more on incidents of harassment and violence, and the audit criteria were based on documentation of formal compliance. DIVERSIFY used formal documentation as audit criteria to only a limited extent, and the psychosocial work environment issues raised by the auditors were generally related to challenges in work organization and core tasks.

4.2.1.1. Case UNIFY. In the municipality, the internal auditors focused their work on formal procedures and documentation. They placed great emphasis on conducting risk assessments and documentation of the risk assessments in a proper and adequate manner in the IT system. The following part of the observed audit at 'Mary Elderly Care Centre' illustrates this focus:

Auditor: What is the greatest challenge with regard to psychosocial work environment?
Respondent: A notice about staff reduction has been issued. Employees are worried about being laid off.
Auditor: Have you worked with this anxiety and related concerns? Now I'm referring to the risk assessment.
Respondent: Yes, we have worked with it.
Auditor: Have you made a risk assessment of the concerns?
Respondent: Yes.
Auditor: Have you documented the risk assessment in the IT system?
Respondent: Yes.
[No further questions or comments to this issue]

Thus, the auditors preferred to rely solely on documentation itself, as it was the visible and tangible representation in the formal OHSM system. For the psychosocial work environment issues, the internal auditors placed emphasis on violence, harassment and bullying. Prior to every audit, internal auditors had received a survey on well-being at the workplace, and the survey results with respect to violence, harassment and bullying were addressed in the audit performed at 'Mary Elderly Care Centre':

Auditor: You have frequent incidents of violence as I can see from this in the survey for well-being. What have you done?
Respondent: We have told employees that they must record and report the violence.
Auditor: Do you have any policies or guidelines in this area?
Respondent: We have not written anything down.
Auditor: Don't you need any guidance?
Respondent: We have tried to focus on it.
Auditor: So you do think about how you can prevent violence. Now you only need to get it described in the system.
[A nonconformity was reported in the audit report]

Both these dialogues show how the auditors had more focus on whether the workplaces had documented the procedures and activities than on whether these procedures and OHS activities had actually helped to alleviate the psychosocial work environment issues.

4.2.1.2. Case DIVERSIFY. In DIVERSIFY, the psychosocial work environment issues differed from one audit to another. There was an open and varied audit agenda, and the auditors chose what issues they considered important to highlight. This diversity is illustrated by observations from an audit preparation meeting, where two internal auditors were planning the topics for the audit at 'Oliver Elderly Care Centre'. One of the internal auditors comments:

It is important to focus on organizational changes when we are going to conduct an audit at Oliver Elderly Care Centre. Communication

Table 1
Similarities and differences between audits in UNIFY and DIVERSIFY.

Municipality	UNIFY	DIVERSIFY
Purpose	In addition to system compliance and effectiveness, audits should inspire local workplaces to improve their OHS activities	Value-adding audits with a focus on dialogue, reflection and guidance in order to improve the psychosocial work environment
Audit teams	14 internal auditors consisting of OHS professionals from different departments in the municipality	12 internal auditors consisting of five OHS professionals and seven auditors employed in different departments as managers or OHS representatives
Audit methods	A uniform audit agenda and a detailed and standardized interview schedule. Semi-structured interviews and documentation reviews are the main methods of data collection. Audit results are reported in the form of checking off items on the checklist and as qualitative statements, narratives and conclusions	An open and varied audit agenda and a short interview schedule tailored to the different workplaces by the individual auditor. Semi-structured interviews are the main method of collecting data. Audit results are reported as checking off various items, and as a qualitative short statement of conclusions
Auditor training	Two days of training as internal auditors. Two days annually with different audit topics and three days annually about different OHS topics	Two days of training as internal auditors. Two days about audits of psychosocial work environment and one day annually about different OHS topics
Auditor practice	Every auditor conducts 10 audits annually, each audit lasting 3–4 h	Every auditor conducts eight audits annually, each audit lasting 2–3 h
Psychosocial work environment topics raised during audits	Time pressure, organizational change and incidents of harassment, bullying and violence	Challenges in work organization and core tasks such as taking care of senile dementia Managing and registration of risks in relation to senile dementia
Audit criteria in the observed audits	Documentation, formal procedures and compliance	Substantive issues and workplace experiences. Almost no focus on formalities and documentation
Audit reporting in the observed audits	Suggested improvements due to lack of documented risk assessments and action plans related to time pressure and organizational change Nonconformities due to lack of documentation of risk assessments, guidelines and action plans related to incidents of violence, harassment and/or bullying	Recommendation to obtain more knowledge about the psychosocial work environment

and cooperation at various levels in the municipality is also an important topic for me, and finally, I would like to know what they are occupied with in regard to the psychosocial work environment.

The choice of audit topics was influenced by the specific workplace context and the interests of the particular auditor. Furthermore, in both audits, we observed that there was much focus on substance and the workplace's subjective experiences and perceptions and no focus on formalities and documentation. The following part of the observed audit at 'Oliver Elderly Care Centre' illustrates this focus on substantive issues over formalistic audit criteria:

Auditor: How do you check the psychosocial work environment between the surveys of well-being?
Respondent: It is difficult to check the psychosocial work environment. It is good to do something together across the teams in their spare time. It affects the psychosocial work environment.
Auditor: What should be done differently with respect to the psychosocial work environment?
Respondent: It's hard to put it into words. We have high absenteeism in one team.
Auditor: How are you trying to create a dialogue on the psychosocial work environment?
Respondent: We ask everyone how they are feeling, and we have frequent follow-up at group meetings.
[No further questions or comments to this issue]

During the audit, the workplaces were also free to choose which issues they would like to bring up. The main issues raised by the staff at 'Oliver Elderly Care Centre' concerned persons with senile dementia and registration of accidents related to senile dementia in the national accident reporting IT-system (called EASY):

Auditor: How do you manage the risks in connection with senile dementia?
Respondent: We make guidelines and action plans for difficult senile dementia.
Auditor: How does it work?
Respondent: It works really well. It's good to draft an action plan that says what you specifically have to do. We are good at providing records of violence and threats. But there are problems with EASY as a registration system.
Auditor: It's important that we are told about the trouble with registrations in EASY. We will bring the problem further up in the OHSM system.

To sum up, in both audits, the internal auditors conducted a dialogue with the staff about their efforts to improve the psychosocial work environment. The information collected by DIVERSIFY's internal auditors was not assessed according to whether it corresponded to formal audit criteria such as policies, procedures or requirements. During the audits, DIVERSIFY's internal auditors had little or no focus on formalities.

4.2.2. Reported audit findings

According to OHSAS 18001 terminology, audit findings can be reported in terms of their conformity or nonconformity with the audit criteria. In practice, however, the two municipalities reported audit findings with a focus on positive results, some suggestions for improvement or only few nonconformities. The workplaces had three months to correct the nonconformities identified during an internal audit. Suggestions for improvement, on the other hand, were not binding proposals. The two municipalities used these audit instruments quite differently. Both reported positive results, whereas UNIFY reported both suggestions for improvements and nonconformities, while DIVERSIFY reported only suggestions for a few improvement in the formal audit reports. In neither of the two municipalities' audits did we find any use of already prepared data sources, such as information about absenteeism related to psychosocial risks.

4.2.2.1. Case UNIFY. Nonconformities were reported in both observed audits. The audits reported a lack of documentation of risk assessments, guidelines and action plans related to incidents of violence, harassment and bullying. Suggested improvements were reported when there was a lack of documented risk assessments and action plans related to other, less visible psychosocial risk factors such as time pressure and organizational change. The following citation from the audit report from 'Mary Elderly Care Centre' is an example of a nonconformity reported because of a lack of documented procedures for guidelines of violence, harassment and bullying:

The workplace lacks local guidelines for the prevention and management of violence, harassment and bullying.

With regard to suggested improvements, auditors recommended that the 'Mary Elderly Care Centre' carry out a risk assessment for organizational change and that they document this risk assessment in their IT system. In the other audit, conducted at 'Hannah Elderly Care Centre', increased time pressures on staff led to the following recommendation:

'*It is recommended that a risk assessment be made of the increased time pressure . . . This may require articulation of cultural concepts, values, and focus on the core task.*'

The recommended improvements in both audits revealed a focus on prevention and management of psychosocial risks at work. This is illustrated by the auditors' focus on whether the workplaces carried out a risk assessment of every identified psychosocial risk. However, it was assessment of risks such as violence, harassment, and bullying that were explicitly required in the OHSM system, whereas assessment of other identified psychosocial risks was merely recommended and not required.

4.2.2.2. Case DIVERSIFY. The audit program included examples of possible nonconformities, such as whether the survey of well-being was more than three years old or whether a follow-up action plan was lacking. Furthermore, at the audit preparation meeting, the manager of the audit program stressed that if the workplaces had not acted on problematic results of the survey of well-being, it should be reported as nonconformity. However, the auditors did not focus on any of these issues during the two observed audits, and no nonconformities were reported at the audits we observed.

The suggested improvements reported by the internal auditors were very limited. An example from the 'Oliver Elderly Care Centre' was a recommendation to obtain more knowledge about the psychosocial work environment survey and that the staff could participate in the courses on psychosocial work environment offered by the municipality.

4.2.3. Difficulties of auditing the psychosocial work environment

Both municipalities gave the psychosocial work environment high priority, as psychosocial risks dominated in most workplaces. In both municipalities, however, auditing the quality of the psychosocial risk management proved to be difficult for the internal auditors. They found it difficult to identify psychosocial risks because these risks were considered less visible and more sensitive than traditional OHS issues. One internal auditor in UNIFY expressed the difficulties with identification of psychosocial risks in this way:

It is much easier to look at an assistive tool such as a ceiling lift than at the psychological work environment . . . Psychosocial problems are also difficult to audit because these problems can be private . . . The employees are not so happy talking about the psychosocial work environment, and it is particularly difficult to talk about [these problems] when managers participate in the audit together with the employees (Auditor 1).

The internal auditors in DIVERSIFY also commented on difficulties in identifying psychosocial risks. One auditor observed:

It is difficult for us to spot psychosocial work environment problems because they consist of complex issues. . . so it is important that we become prepared to spot psychosocial risks. . .and we must learn about body language, moods, and how to understand indirect signals (Auditor 5).

The internal auditors generally considered the psychosocial risks to be invisible, sensitive and intangible and therefore difficult to identify. Another difficulty for the auditors was related to assessments of the quality of psychosocial risk assessment and the subsequent action plans. One internal auditor in UNIFY formulated the difficulties in this way:

It is more difficult to assess the psychosocial risk assessment. . . We cannot assess whether the workplaces have written down the right solutions in the action plans because the solutions are not simple and clear. But we can see whether the risk assessment is noted in the IT-system (Auditor 2).

The difficulties of assessing the content and quality of the action plans were emphasized in a similar way by a DIVERSIFY auditor:

It is difficult to assess the content of the action plans. . . Therefore, we only check whether the formal things are in order, and in general, we have an expectation that the workplaces have chosen the best solutions. . . We would not go in and interfere in the workplace's decision (Auditor 6).

The manager of the audit program in DIVERSIFY was aware of the difficulties in assessing the quality of the risk management process using traditional audit methods:

It is much easier to give auditors a checklist when it is about hard-core work environment. But it is important for our auditors to use other methods and tools when they have to assess the quality of the risk assessments and the action plans with respect to psychosocial work environment. . . To learn to ask reflexive questions concerning the action plans. . . such skills are very important because reflexive questions can challenge the decision-making process and thereby enhance the chosen solutions.

The manager of the audit program in DIVERSIFY thus considered the use of dialogue and reflection in professional assessments as adequate methods for overcoming the present difficulties. In this context, however, he also emphasized the need for development of auditor knowledge and experience in the psychosocial risk management process and improvement of qualitative interviewing skills. The manager of the program in UNIFY had recently augmented the auditor team with an organizational psychologist, who was used for a few audits with a special focus on the psychosocial work environment. For the general internal focus, however, the manager expressed her confidence in focusing on the formalized procedures. The internal auditors in DIVERSIFY stated that they were able to assess only formalities, and they regarded it as difficult to assess the quality of psychosocial risk assessment and action plans. The OHS professionals in both municipalities experienced some of the same difficulties for the assessment, but they also considered themselves to be better qualified to do more thorough assessments.

5. Discussion

The two municipalities exhibited important similarities and differences in the way they included the psychosocial work environment in their internal audits of OHSM systems. The similarities in audit practices were related to difficulties assessing the quality of the management of psychosocial risks in their OHSM systems. Psychosocial risks were recognized as a major challenge in both municipalities and therefore had high priority. For the internal auditors, however, using the available audit methods made it difficult for them to assess the quality of the various elements of the risk management process, i.e., the identification and assessment of psychosocial risks, design and implementation of interventions and evaluation of outcome. There were differences between the two municipalities in identifying the relevant audit issues and establishing a clear focus in conducting audits on site. In the first case (UNIFY), the psychosocial work environment was considered to consist of incidents related to violence, harassment, and bullying. The focus of the audits was limited to checking whether formalities and documentation had been adhered to, and nonconformities were reported when formal procedures were not followed. In DIVERSIFY, there was less focus on formalities and documentation and no reports of nonconformities. Here the psychosocial work environment was interpreted from a broader perspective, as audit issues were typically related to challenges with work organization and core tasks.

The findings from our two case studies indicate that internal auditors find it difficult to assess psychosocial risks. This is especially because the psychosocial risks appear less directly visible to them and because managing these types of risks is more complicated. In addition, as no regulatory specification standards exist for the psychosocial work environment, evaluating the quality of the risk assessment and action plan appears more subjective and contextual to auditors. Under these conditions, they tend to abstain from pointing out irregularities and citing nonconformities.

In this context, the internal auditors consider it difficult to meet the essential audit requirement for the evidence-based approach. Auditors must collect and analyze evidential data in order to formulate audit findings that can be reported as either conformity or nonconformity with the audit criteria. The two municipalities show how internal audits can be conducted in different ways, focusing on either formalities and documentation or pursuing a rather subjective 'coaching' approach. The latter approach may be adequate for targeting psychosocial issues, but it does not evaluate the extent to which the workplaces actually comply with the standard.

In the first case (UNIFY), the focus on collecting data related to procedures and documentation of almost all activities drove the workplaces to generate documentation in order to meet the audit criteria, but without necessarily reflecting on whether these routines actually improved the psychosocial work environment. The focus on formal documentation distracted the internal auditors from controlling the quality of psychosocial risks management and from conducting an analysis of risks and prevention measures. Nonconformities were reported only when there was a lack of documented guidelines for violence, harassment and bullying, which are psychosocial work environment issues that can be conceptualized as 'incidents', thus making them easier to count and identify during an audit. The risk of this approach is that it focuses on 'compliance on paper' and may not have impact on the actual work environment.

In the other case (DIVERSIFY), the internal auditor's method of conducting audits depended on each individual auditor's knowledge, experience and personal interests. Audit findings were reported as suggestions for improvement rather than as cases of noncompliance. The result was a non-commital dialogue which

may be helpful for the audited workplaces in the short run, but which does not use the full toolbox of instruments provided by the OHSM standard and does not ensure that the problems identified are actually addressed and eventually solved.

To sum up, in targeting psychosocial risks, the two cases reveal the challenges in transforming general audit guidelines into local audit practice. In both Danish municipalities, auditors had difficulties addressing and evaluating the specific psychosocial issues at stake. The purpose of auditing management systems is to assess whether the system fulfills the requirements of the management system standard, i.e. that it is correctly implemented, and that it is effective in managing OHS risks. If the auditor assesses that the standard has been met and is correctly implemented, it is assumed – according to the logic of the standard – that effectiveness of the management of the work environment is high, including the quality of how psychosocial risks are managed. If this is not the case, the organization has to improve its OHSM compliance system. However, the general guidelines in the OHSAS 18001 standard, practically devoid of any reference to psychosocial factors, are difficult to apply to the multi-causal and complex area of psychosocial work environment. Our findings are in accordance with Leka et al. (2011), who argue that the international OHSM system standard OHSAS 18001 does not explicitly and adequately deal with psychosocial risks. In order to remedy this problem, two standards focusing particularly on regulation of psychosocial risks, have recently been published: the British "Guidance on the management of psychosocial risks at the workplace", PAS (Publicly Available Specification) 1010 (2010) and the "Psychological health and safety in the workplace" (National Standard of Canada, 2013). The new standards, which are designed to complement OHSAS 18001, understand psychosocial risks to be context-specific, multi-causal and that there are no quick fix solutions. Moreover, the new standards include a more contextual and participative approach than OHSAS 18001. The key principles of assessing psychosocial risk in the new standards are employee involvement and the employees' expertise as reliable and valid information (Hohnen et al., 2014). However, these standards have not been adopted in Denmark, and so far, no empirical research on the implementation of the PAS 1010 or the Canadian national standard for psychological health & safety in the workplace has yet been published.

Even though these new standards could be more helpful in providing more detailed guidelines for audits of psychosocial risks, this alone would not solve the complexity of the problem. The psychosocial work environment would still by nature be less visible and tangible and sensitive. Assessments of such issues, therefore, require competences for professional and reflexive judgments on a high level. Viewed in this light, the brief period of auditor training in the two municipalities, two and four days, respectively, is insufficient. Even the OHS professionals in this study expressed concern about their knowledge and skills for in-depth audits of the psychosocial work environment.

This paper has explored internal auditing practices in two municipalities in Denmark. It was not possible to measure the effects of the OHSM system on the psychosocial work environment, but the results indicate shortcomings in effective management of the psychosocial work environment. We must expect that other municipalities, as well as other types of public and private organizations, will face similar constraints in the transformation of the general guidelines in the standard to the kind of audit practices that can effectively meet the challenges of psychosocial risk assessment.

Our results suggest that the full potential of internal audits of psychosocial risks has not been exploited. Important issues such as time pressure and stress have not been touched upon, the quality of action plans has not been assessed, and the issue of nonconformities has not been discussed. Hence, there is a need to develop methodologies for internal audits. So far, Bergh et al. (in press) have published such a methodology, which has been pilot tested offshore in the oil and gas industry. This methodology is rather extensive and includes a number of activities which in the Danish context are considered part of the risk assessment that the OHSM system is required to carry out. Following the pilot testing, the oil and gas company decided that the suggested methodology was too extensive to apply on a regular basis.

The experience from the above-mentioned study shows that suitable internal audit methods must require a level of resource utilization that is realistic for regular application. Furthermore, such methodologies should include a requirement for the proper procedures, tools and competencies. As psychosocial risks are strongly context dependent, methodologies should open the possibility for tailoring the audit to the context of the specific organization in question and at the same time secure that the evidence based knowledge about psychosocial risks is utilized in the audits. The knowledge and skills of the auditors are a key issue here, and any organization performing internal audits needs to take into consideration both the minimum knowledge and skills requirements as well as the continued development of competencies for carrying out audits. Following such a strategy can help organizations as well as the internal auditors to achieve the full potential of the audits. The two new standards can be a point of departure for such a development.

6. Conclusion

The fact that OHSAS 18001 hardly mentions the psychosocial work environment and that it presumes that psychosocial risks can be addressed like any other OHS risk results in very limited guidance on how to audit OHSM systems targeting psychosocial risks at local work places. The routines of carrying out audits of psychosocial risks are therefore left to the discretion of the individual organizations. The result of this lack of guidance is not only major variations in the implementation and application of OHSM systems in this area, but also in a lack of knowledge of the extent to which psychosocial risks are actually targeted and properly controlled by the systems. In cases where local competencies are able to steer the audits to relevant issues, the systems may work well. However, our study has shown that OHSM systems certified according to OHSAS 18001 do not in themselves guarantee that psychosocial risks are controlled in the manner intended by the standard. The existence of a standard is not enough. Without adequate psychosocial risk assessment routines, there is a risk that the full potential of the OHSM system cannot be achieved. It would be beneficial to have clearer guidelines specifically adapted to the psychosocial work environment in the OHSAS 18001 standard.

A new ISO standard – ISO 45001 – is being developed to replace OHSAS 18001 by the end of 2016. Although the overall aim of ISO 45001 remains the same as OHSAS 18001, the new standard contains some changes. With regard to managing and auditing psychosocial risks, the ISO 45001 standard, like OHSAS 18001, does not deal explicitly with psychosocial risks. Furthermore, the concept 'psychosocial risk' is mentioned only in the informative part of ISO 45001 – the 'Guidance for use' – that is not a part of the auditable criteria (Committee Draft, ISO, 2015; IRCA, 2014). In this sense, it seems that the new ISO standard does not provide much guidance in auditing the management of psychosocial risks in relation to OHSM systems.

The general audit guidelines allow considerable room for interpretation, as illustrated by the diverging perceptions on what might be audited in the two municipalities. The results of this study reveal the challenges in transforming the general audit guidelines into internal audit practices targeting the psychosocial

work environment. Psychosocial risks cannot be observed, managed and measured in the same manner as most accident and physical OHS risks. And the internal auditors in both municipalities found it difficult to assess the quality of their management of psychosocial risks.

Although the present study has highlighted a number of challenges facing OHSM systems when auditing psychosocial risks, further empirical research on internal audit practices is needed. In addition, studies of external audits can provide valuable results that can help enhance our knowledge in this field. Finally, the development and documentation of specific methods and auditor competencies is necessary in order to carry out high quality audits of the psychosocial work environment. Organizations that intend to carry out audits of the psychosocial work environment would benefit from more extensive training of the auditors. Clearly, the general auditing methods and skills need to be supplemented by a more thorough understanding of psychosocial work environment issues.

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Hard Work in Soft Regulation: A Discussion of the Social Mechanisms in OHS Management Standards and Possible Dilemmas in the Regulation of Psychosocial Work Environment

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ABSTRACT

Certified occupational health and safety (OHS) management systems have become a global instrument in regulation of the work environment. However, their actual impact on OHS—in particular on softer psychosocial issues in the work environment—has been questioned. The most important standard of OHS management is OHSAS 18001, which has recently been supplemented with a British publically available guideline (PAS 1010) focusing specifically on psychosocial risk management. On the basis of the international literature on management standards, the present paper analyses OHSAS 18001 and PAS 1010 in order to understand the mechanism by which they work. The paper takes a social constructionist approach conceptualizing standards and their expected mechanisms as socially constructed—based on a particular kind of knowledge and logic—although they are presented as objective. Such a constructionist approach also emphasizes how standards transform specific work environment problems into generic procedures that can be audited. In the case of OHS standards, both the work environment in general and the psychosocial risks in particular are transformed into simple monocausal auditable relations whereby the complexity of psychosocial work environment issues seems to disappear. The new PAS 1010 guideline, which is particularly focusing on regulation of the psychosocial work environment, only partly succeeds in solving these shortcomings of OHSAS 18001.

KEY WORDS

Standards / Regulation / Psychosocial working environment / Document analysis

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Introduction

> "Standards quite often fall into the category of 'boring things' that fail to elicit much attention and scrutiny. Although standards are often formally (or legally) negotiated outcomes, they also have a way of sinking below the level of social visibility, eventually becoming part of the taken-for-granted technical and moral infrastructure of modern life. Ironically however, it may be just this relative invisibility that gives standards their "inertia." (Timmermans & Epstein, 2010: 71)

As Timmermans and Epstein indicate, standards have grown from a topic of interest mostly to engineers and technicians into getting an increasing impact on the organization of modern social life, including contemporary working life (Boiral, 2012; Brunsson & Jacobsson, 2012). Within the field of work environment, standards have moved from having limited influence as standards in adjoining fields, for example, ISO 9000 and ISO 14000 to being a principal form of regulation by applying occupational health and safety (OHS) management standards. The most widespread standard in the field of work environment is the OHSAS 18001, a semi-international standard for management of OHS originally developed by the British Standards Institute (BSI). OHSAS 18001 is supposed to manage all aspects of the work environment. However, recent studies have identified several shortcomings in the way standards manage psychosocial work environment problems (cf. Hohnen & Hasle, 2011; Leka et al., 2011). Recently, a British public guidance (PAS 1010) has appeared as a supplement to OHSAS 18001 specifically addressing psychosocial work environment risks. In spite of the fact that PAS 1010 can be viewed as a significant contribution to the solution of the problems in OHSAS 18001, it also raises some dilemmas that seem related to the ways standards work.

Sociological researchers suggest that prevailing research tends to conceptualize standards as either totalizing narratives dehumanizing social life or weak and insignificant forms of regulation (Lampland & Star, 2009; Timmermans & Epstein, 2012). Following this, Timmermans and Epstein (2012) recommend more empirical analyses in specific domains in order to shed light on the implications of standardization as a regulatory tool. This article is an attempt to carry out such an empirical analysis within the field of psychosocial work environment. We do this by identifying particular significant characteristics of standards from a social constructionist analytical perspective (Ahrne & Brunsson, 2005; Berger & Luckman, 1966; Brunsson & Jacobsson, 2000; Brunsson et al., 2012; Giddens, 1990) Viewed from this perspective, the development of standards is not purely technological and using standards as a regulatory instrument involves more than just the (technical) specifications stipulated by the standard. For example, audits as a basic component in standards rely on a certain type of presumably objective calculation of risk. In order to carry out audits, therefore, a certain kind of knowledge base is created. Audits have therefore been viewed as constitutive of the work environment that they are supposed to monitor (Power, 1996, 1997, 2003). Standards can, as we shall see, be conceptualized as international, abstract expert systems usually developed by private organizations, functioning as voluntary rules of conduct as well as (political) instruments of control (Brunsson & Jacobsson, 2000). Standards are also a specific form of governance and coordination related to an increasingly globalized market.

The structure of the paper is as follows. After a brief description of the methodology, we define international standards and outline the theoretical perspective of the

paper. This is followed by an analysis of the social mechanisms in standards in a sociological regulatory perspective. After this, we turn to the empirical part that consists of an analysis of the prevailing international OHS standards: OHSAS 18001 and PAS 1010. The general aim is to depict possible dilemmas related to the application of international standards to the specific domain of psychosocial work environment regulation. We conclude by returning to a discussion of standards as a regulatory form and their limitations.

Methodology

The paper critically examines social processes and discursive logics involved in the regulation of OHS by international standards with a particular focus on the psychosocial work environment. The complex psychosocial work environment has proved particularly difficult to regulate by prevailing OHSAS standards because of their multicausal, subjectively experienced, and contextual nature that contrasts the monocausal and technical OHS issues, which the standards were originally aimed to address (Hohnen & Hasle, 2011; Leka et al., 2011). In the paper, we analyze standards as written documents. The implication of this is that the analysis can only shed light on the type of knowledge and assumed logic that can be related to the standards and the construction of standards as text but not on how standards are implemented and work in practice. In the article, we apply the concept "social mechanism," which we define as "an inherent causal potential in a given social context, e.g. a causal potential that, integrated into a particular knowledge context, creates certain direct or indirect reactions or changes." This definition is inspired by an understanding of mechanisms described by Pawsons (2006), as "semi-regularities."

The first part of the analysis is a discussion of mainly theoretical organizational studies on standards as a type of regulation. Here, we analyze sociological/anthropological studies that focus on regulation in a broad sense, including types of knowledge, types of logic, and reasoning as well as the overall process of creating standards (Brunsson & Jacobsson, 2000; Hohnen & Hasle, 2011; Jacobsson, 2000; Power, 1996, 1997; Timmermans & Epstein, 2012), and we enhance some of the mechanisms of standards that have been pointed out in the literature.

The second part of the paper is an analysis of the concrete documents related to OHSAS 18001 and PAS 1010 in order to dig out the possible social mechanisms of standards. OHSAS 18001 is strategically chosen because it claims to deal with psychosocial work environment and at the same time reflects intrinsic mechanisms of a range of international standards such as ISO 9000 and ISO 14001 (Jacobsson, 2000). Furusten (2000) suggests furthermore that standards can be divided into two categories: "partial standards," that are essentially recommendations, and "mandatory standards," that organizations need to follow in order to be certified according to the standard. OHSAS 18001 can be categorized as a mandatory standard, while PAS 1010 as a guideline can be classified as a partial standard.

PAS 1010 not only aims to create guidelines, which are compatible with the OSH (occupational safety and health) standards on the one hand, but also aims to address deficiencies (identified in earlier studies as particularly apparent when attempting to regulate psychosocial work environment issues) on the other hand. Where OSH standards work

with "abstract" and decontextualized knowledge and perceive OSH risks as monocausal, "technical," and "measurable," PAS 1010 attempts to address psychosocial work environment risks as complex, contextualized, and subjectively experienced forms of knowledge (BSI 2011). In other words, an analysis of PAS 1010 is also an analysis of the potential of standards to reconcile two very different types of knowledge.

The analysis of the standards is inspired by discourse analysis and aims at understanding the structural as well as cultural conditions that standards epitomize (see, e.g., Power, 1996, 1997). The analysis focuses on the concepts and types of logic that standards entail, how work environment is addressed and monitored, that is, what areas of work environment are considered relevant within the management system, and what types of monitoring are considered reliable. In accordance with the overall social constructionist framework of the paper, we supplement the analysis of the documents themselves with a brief analysis of their creation, including information about the main stakeholders as well accounts of problems or conflicts that characterizes the process of creation. For these accounts, we rely on several sources (Ahrne et al., 2000; Frick & Kempa, 2011; Leka et al., 2010).

Defining standards as a form of regulation

Brunsson and Jacobsson (2000) discuss standards from a sociological perspective where they conceptualize regulation as "rule-making in a broad sense" as well as a form of "organized governance" (ibid. 12). On the basis of the notion of rule-making, Brunsson and Jacobsson distinguish between three fundamental types of regulation: directives, norms, and standards. Norms are internalized rules that are implicit (one does not have to reflect upon them), whereas directives are explicit, mandatory rules often combined with sanctions in case rules are not followed. Standards are presented as a combination of the two. Standards differ from directives because they are (or are claimed to be) voluntary, and they differ from norms because they are explicit and because they have an evident source. The degree in which a standard is adhered to does not depend on any hierarchical authority, but on whether the standard is regarded as relevant and appeals to the users or adopters of the standard (ibid. 13). It should be noted though that the standards become a directive for the employees in the organization where it has been adapted. So, standards provide explicit rules that are voluntary, and they do not have power to enforce, rather they must convince potential users of the usefulness. Standards can hence be described as non-hierarchical, voluntary, and usually global pieces of advice. Following Brunsson and Jacobsson (2000), we use the following definition:

> "Standards are rules that are claimed to be voluntary, have a source and are explicit." (ibid. 13)

However, although standards may be conceptualized as a certain type of regulation, they are often used in combination with both directives and norms. In nearly all countries, a certified OHS management system requires compliance with national OHS regulation (Frick & Kempa, 2011), and in some cases, national authorities may decide to include the standard in its legislation such as in Denmark, where organizations with a certified OHS management system are exempted from regular labor inspection. The content of

the standard may over time develop into social norms about how the work environment is handled. Viewed from a social constructionist perspective therefore, standards must be looked at as entities that may operate in a range of ways, for example, as instruments of control, as global coordinators, and as having a normalizing and often homogenizing power. They must therefore be studied within the external as well as internal sociopolitical context in which they are produced and operate.

Conceptualizing generic socially constructed mechanisms in standards

Standards as a form of social regulation include a concern with the social processes involved in the creation of standards as well as a focus on the type of actors, knowledge, norms, and authority that standards promote (Boiral, 2010; Brunnsson & Jacobsson, 2000; Brunsson et al., 2010; Star & Lampland, 2009; Timmermans & Epstein, 2010) as well as an analysis of audits (Power, 1996, 1997, 2003). The conceptualization of standards as a means of regulation in this perspective goes beyond the analysis of the particular standards and their implementation by aiming to understand the kind of transformations of responsibility, knowledge, and authority that standards epitomize. In the following, we take a closer look at what we consider to be the significant characteristics of standards in terms of how they implicitly as well as explicitly influence the regulation of OHS.

Production and reproduction of standards

In terms of understanding the specific mechanisms inherent in the production of standards, we need to look at the production process. Most standardizing companies are non-governmental organizations such as ISO (International Organization for Standardization) and BSI (the British Standards Organization). In addition, governments may also issue standards and international governmental institutions are quite active standardizers. In particular, EU is an active standardizer by issuing a large number of white books (soft law) or by delegating to standardizing organizations instead of issuing directives (Brunsson & Jacobsson, 2000: 2–4). Often groups of professionals come together as authorized experts in the construction of a standard. Haas (1990: 41) terms such communities "epistemic" referring to groups who "share a common commitment to a causal model as well as a common set of political values." Following Haas, they are also united by a belief that their particular model will promote human welfare and therefore should be translated into policies (Haas quoted in Jacobsson, 2000: 48). It is important to emphasize, however, that composition of such groups is accidental and often dominated by private firms that can afford the resources to participate in the development of standards.

Content and operation of standards

Standards as a form of regulation have specific characteristics related to agency, authority, and knowledge. Jacobsson (2000: 41) and Power (1996, 1997) note as a significant feature of standards that they are based on so-called "expert systems"

and "expert knowledge." Expert knowledge refers to the fact that knowledge in standards can be characterized as technical and rational and usually derives from general ideals rather than actual practice (Jacobsson, 2000). Standards are therefore said to transform knowledge into rules that are abstract, general, and recorded in writing. When this kind of knowledge becomes embedded in rules set by the standard, it tends to appear self-justifiable (ibid.). In addition, standards are usually built on rules about monocausal technical solutions also when addressing issues that involve more complex non-technical and/or political issues. Standards have a high level of abstraction, and Jacobsson paraphrasing Giddens (1990) points out that standards and the knowledge that is generated by standards is de-contextualized in space and time (Jacobsson, 2000). The problem is that not all kinds of knowledge are easily stored in this way and consequently that practice-near and tacit knowledge is not included in the standards.

The transformation of knowledge into technical rules also tends to promote depolitization of standardization:

> "Some kind of rules that were previously considered politically important are now set by the European standardizing organisations, and thus by experts who might be representatives of companies, interest groups, or public agencies." (Jacobsson, 2000: 45–46)

The consequence is that standardization creates order without (political) responsibility. The tendency for political issues to migrate to the technical sphere is both promoted by the production process of standards and by the fact that standards regulate former political decisions:

> "In Sweden, to take one example, the determination of what occupational health and safety actually meant was precisely delegated to employer associations and trade unions, although in principle politicians could always intervene. Now decisions in this area have largely been turned over to transnational groups of experts; it is difficult to ascertain who belongs to these groups and how they function. The politicians remain responsible, but the scope of their influence has been reduced." (Jacobsson, 2000: 48)

On top of this, it is difficult to alter standards, because there is no formal channel of influence and standards do not answer to anyone. Responsibility (including political responsibility) is therefore transferred to individual actors such as organizations and their managers and employees. In this way, standardization promotes depolitization. Another consequence of that regulation is individualized making it difficult to oppose or complain about standards.

> "Markets and standardization generate fewer complaints than organizations. In organizations most people can blame someone else, whereas market actors or those who follow standards have themselves to blame." (Brunsson & Jacobsson, 2000: 25)

The consequence is that standards do not offer clear channels of voice for users, and the responsibility for the impact of a particular standard as well as the relevance of procedures or policies rests entirely with the users of the standard.

Procedures and audits as key elements

> "Many standards are primarily concerned with procedures and presentations rather than with production, products or the effects of these. A number of standards concerning the work environment refer not to the work environment itself but to the plans and procedures organizations should develop for dealing with related issues." (Jacobson, 1993, quoted in Brunsson & Jacobsson, 2000)

Following Brunsson and Jacobsson (2000), the rules in standards are mostly concerned with plans and procedures for regulating and documenting the subject matter, for example, work environment rather than being concerned with the extent to which the particular organization secures a safe and sound work environment. This has implications on several levels. First, they tend to resemble what Douglas (1992) has termed "rituals of verification" rather than actual verification because the focus is on verifying the establishment of procedures rather than on the compliance with the requirements that these procedures are expected to ensure, for example, a protection against psychosocial risks at work. Second, and in continuation of this, it can be argued that audit regimes indirectly create what Hertfeld (1992, quoted in Strathern, 2000) has called bureaucratic "indifference" by legitimizing audit systems as a way of securing a certain quality of the work environment, which in turn makes it difficult to criticize the systems or sustain the idea that alternative assessments may exist. Finally, Power (1997) suggests that "good performance" is conflated with "the visibility of good performance" due to the significance of external auditing where the ability to demonstrate solutions shape internal policies and initiatives (see also Hohnen & Hasle, 2011).

From a social constructionist perspective, it is possible to identify some interesting internal mechanisms of the audit-based systems developed in international standards. Power (1996, 1997, 2003) suggests that such auditable systems are not merely there but are constructed as a part of the implementation of the certified management system. He points to two interrelated processes. First, audits require a certain kind of expert knowledge that is considered legitimate knowledge by the system, for example, reporting near misses or measuring psychosocial work environment by yearly questionnaires. Second, an auditable work environment, based on the kind of (technical) knowledge necessary in the auditing process, is actively created. The constructionist approach of Power thereby entails the idea that auditing is a process that actively creates the work environment that it supposedly monitored. In other words, audit systems transform the subject matter of the management systems that it monitors into a distinctive type of procedures and technologies that are recognizable and auditable. There are several implications of this. First, audits are generally more focused on the presentation and procedures documenting work environment policies rather than with the compliance with such prevailing forms (Power, 1996). Second, and in continuation of this, a certain set of problems, corresponding to the available set of procedures as well as available solutions, are constructed as the most significant issues, while alternate issues remain unidentified (Hohnen & Hasle, 2011).

The relationship between abstract rules and local practice

Standards are rules storing abstract, expert knowledge; hence, standards are based on ideal general de-contextualized cases; they are voluntary and standardizers have no

authority in terms of enforcing compliance with standards. Therefore it is far from clear why people should follow standards, and if they do, how these generalized forms of knowledge stored in procedures are translated into practice. The challenge of making standards appeal to a differentiated world of customers seems to result in standards being general and abstract rather than specific and contextualized:

> "Standards are by definition 'rules for the many.' As such they are necessarily abstract to some degree and general in scope, and cannot cater for the idiosyncrasies of the organizations to which they apply." (Brunsson et al., 2012: 621)

It follows therefore that there is a necessary process of adoption involved where general rules are transformed into localized rules. Such a process of adaption may not only require changes in the local context, but may also result in a transformation of the standard itself. In its essence, this is a two-way translation process involving both the translation of general rules into concrete practices and a translation back to the more general requirements in the standards in order to demonstrate that the standard is being followed (Brunsson et al., 2012: 621–622). It should be noted, however, that we do not regard this process as a closed process in quite the same way as Brunsson et al. did (2012). Although the preference for abstract rules and the above-mentioned logic of an almost self-fulfilling prophecy of local practice compliance with the abstract standard, we suggest that this rather functionalist vision may be challenged in practice. Abstract expert systems may also create a real space for developing local practices that may address local work environment issues and create new solutions. The interaction between standards as rules and local practices does not take place in a closed social system.

The adaption of standards therefore tends to be based on local organizational interests, for example, actors may acquire influence and/or give their own strategies additional authority by adapting standards. The fact that standards are necessarily abstract and general in order to appeal to many different users therefore leads to great variation in implementation. On one hand, the demand for local adaption gives the actors a scope to form the concrete use of the standard into local needs, but on the other hand, this adaption will be influenced by the logics of the standard, for instance, by the need to make the work environment auditable. In addition, the more abstract the standard is that may imply wider application, the more difficult it becomes to specify compliance. Thus, abstraction appeals to users, but makes it more difficult to estimate when the requirements of the standard is met, and as adaption of documentation (language) is easier than adaption of practice, hence "what actors say is more influenced by standards than what they do" (Brunsson, 2000: 145).

Summary: social implications of governing by standards

Understanding standards from a sociological and organizational perspective reveals a number of generic mechanisms that have implications for the subject matter being regulated. First, standards are based on rules that have a source and that are explicit. The fact that standards are rule-based has consequences for the kind of knowledge base of standards, because not all knowledge is easily stored in rules. Technical knowledge and technical solutions are more compatible with standards, whereas more tacit and practical

knowledge cannot be transferred into abstract rules. Standards therefore tend to focus on technical monocausal knowledge. An important consequence is a presentation of knowledge as objective and consensus oriented, making topics with conflicting interests and/or knowledge that are related to influence, position, and interests unnoticed. Second, standards focus on management systems that can be audited both internally and by external parties. In doing so, standards can be viewed as an example of what Giddens (1990: 79) terms "abstract expert systems" characterized by "disembedding" in the sense that social relations are no longer related to specific local contexts or communities, but are lifted out and based on more invisible systems of knowledge and social networks (1990: 21). A large part of social activities rely on systems (e.g., the internet; bank transfers; tax paying), which are invisible (and unknown) to the actors performing them. The knowledge base of such systems is abstract, decontextualized, and depersonalized. As a result, standards tend to be preoccupied with procedures, processes, and presentation rather than with subjects or products. Furthermore, controlling systems by audits seems to enhance such a focus on procedures by transforming other knowledge areas (about products or subjects) into a type of procedural/technical knowledge that can be audited. Third, abstract and decontextualized systems may be necessary in order to secure the general application, but it also makes a room for great variety. Abstract knowledge needs to be localized and translated into practice as well as translated back into general procedures/processes that are recognized in the standard and in auditing the system. Therefore, in spite of the initial intention, variety in the form of local and national differences may be an unintended consequence of global standardization. A fourth aspect of international standards, which concerns us here, is the fact that they have been developed in a negotiation between influential stakeholders. To some extent, this may ensure widespread compliance; however, neither the recruitment of stakeholders nor the outcome of negotiations ensure, for example, that major findings of scholarly research form the basis knowledge of a standard.

Empirical analysis of OHSAS 18001 and PAS 1010 as standards

In the following section, we analyze how such social mechanisms are played out in the concrete example of OHSAS 18001 and the recent British Public guidance PAS 1010. In the analysis of OHSAS 18001, we focus on the standard itself but in addition to this also draw on prevailing literature. The analysis of PAS 1010 is based solely on the text, as no empirical research has yet been carried out.

OHSAS 18001

Occupational health and safety management started as part of the pre-World War II "safety movement" wherein predominantly large firms started to systematically attempt to reduce accidents (Heinrich, 1959). These systems were later developed into extensive management systems such as Du Pont safety management systems (Frick & Wren, 2000; Hasle, 2010). In recent decades, these systems have developed into certified management systems and OHSAS 18001 is a response to an increasing global market demand for external accountability together with ISO 9000 and ISO 14000 (Jacobsson, 2000; Power,

2008). In accordance with the principles of ISO 9000, OHSAS 18001 is characterized by the establishment of internal systems of management and control that are then audited and certified by external auditing agents. OHSAS 18001 is not an ISO standard (although this was attempted); instead, it became a British Institute Standard (BSI) in 1999 supported by 14 national standard issuing bodies (Frick & Kempa, 2011). Since then, OHSAS 18001 has de facto performed as an international standard.

OHSAS 18001 addresses all occupational health and safety risks but does not explicitly mention the psychosocial work environment. Only once in the glossary do we find a reference to "mental conditions" when ill health is defined as "identifiable, adverse physical or mental condition arising from and/or made worse by a work activity and/work related situation" (DS/OHSAS 18001, 2008: 3). It follows that the regulation of psychosocial work environment is assumed to be covered by the more general requirements in the standard for the creation, maintenance, and monitoring of an OHS management system within the individual organization. However, empirical studies have pointed out that the certified OHS management system does not necessarily secure a good psychosocial work environment in practice (Hohnen & Granerud, 2010; Hohnen & Hasle, 2011; Leka, 2011).

The OHSAS standard is based on a methodology known as plan-do-check-act (PDCA) (DS/OHSAS 18001, 2008: vi). To *plan* is "to establish the objectives and processes necessary to deliver results in accordance with the organizations" OHS policy. This among other things requires to "establish, implement and maintain a procedure(s) for the ongoing hazard identification, risk assessment, and determination of necessary controls" (DS/OHSAS 18001, 2008: 6). To *do* refers to the implementation of a range of processes that are meant to ensure performance (ibid. vi.). These processes include setting up a management system, for example, ensuring management commitment, procedures to make personnel aware of OHS risks, procedures for internal communication, procedures for workers participation in risk assessment, and ensure documentation of OHS policies as well and procedures to control such documents (ibid. 8–11). To *check* is "to monitor and measure processes against OH&S policy objectives, legal and other requirements, and report the results" (ibid. 11). This requires the establishment of procedures to monitor and measure OHS performance on a regular basis, procedures to record, investigate and analyze incidents, procedures for dealing with nonconformities, and procedures defining requirements for actions in order to avoid recurrence (ibid. 12). Finally, to *act* means to take actions to continually improve OH&S performance (ibid.). Management must review the OHS management system at planned intervals "assessing opportunities for improvement and the need for changes" (ibid. 14). The standard contains requirements (mainly focusing on the establishment and monitoring of the management system) that can be objectively audited, but it does not establish absolute requirements for OHS performance other than what is specified in the OHS policy of the particular company and/or in legal national requirements (DS/OHSAS 18001, 2008 vi). The standard explicitly states that it does not include specific OHS criteria or detailed specifications:

> "This Occupational Health and Safety Assessment Series (OHSAS) Standard specifies requirements for an occupational health and safety (OH & S) management system, to enable an organization to control its OH & S risks and improve its OH & S performance. It does not state specific OH & S performance criteria, nor does it give detailed specifications for the design of a management system." (DS/OHSAS 18001, 2008: 1)

We suggest that part of the problems of OHSAS 18001 in addressing psychosocial work environment is directly related to some of the social mechanisms related in international standards. The lack of or specifications of factors influencing the psychosocial work environment and the PDCA methodology create a management system that focuses on abstract rules and procedures as well as the monitoring of such procedures by audits. In addition to this, there is an overall focus on the registration of "incidents of nonconformities" in both risk assessment and prevention and improvement. The OHS management system therefore can be categorized as an abstract expert system with a knowledge base focusing on monocausal technical incidents. The focus on the reporting and prevention of such incidents positions OHS risks as related to nonconformative behavior rather than more structural or more complex work and employment issues. The conclusion is that OHSAS 18001 builds on procedures that are abstract, and it is combined with a general notion of OHS risks as monocausal incidents or breaches of compliance with established technical procedures. The consequence is that more complex work environment issues are left out of sight. In order to be able to capture the more complex and softer issues of the psychosocial work environment, the individual organization needs to build on professional, contextual local knowledge that are not necessarily monitored as part of the system.

PAS 1010: a solution to the regulation of psychosocial work environment by standards?

As a supplement to OHSAS 18001, PAS (Publicly Available Specification) 1010 has been developed as a "Guidance on the management of psychosocial risks at the workplace" (BSI, 2010). The general background and motivation for the development of the guidance has been an acknowledgment of the changing nature of work accompanied by new and emerging types of risks to workers health and safety (Leka et al., 2011). Leka et al. (2011) state three observations concerning the prevailing regulation of psychosocial OHS risks by existing standards.

The first observation is that there is a lack of clarity and specificity of terminology suggesting a need for more precise concepts. In response to this, PAS 1010 focuses specifically on psychosocial risks, including work-related stress, psychosocial hazards, violence, harassment, and bullying as the main issues. Psychosocial risk is used as an umbrella concept covering other specific areas of psychosocial work environment. The specification of the issues includes the definition of work-related stress as caused by psychosocial hazards, violence, or harassment. Work-related stress may be caused by a single incident, for example, violence or the more complex psychosocial hazards that are defined as "interactions among job content, work organization and management, and other environmental and organizational conditions, and employees' competencies and needs" (ibid. 2.15).

The second observation is the fact that existing standards have trouble providing concrete guidance to organizations in the area of psychosocial risk management:

> "Even though the OHSAS 18000 series and the ILO-OSH 2001 make specific reference to the psychosocial work environment, this reference is very brief and a preventive framework for action that organisations can adopt in practice is lacking, suggesting limited usability of these standards." (Leka et al., 2011: 1054).

Finally, a third observation concerns findings from several studies suggesting that European employers have found international standards less effective in the area of psychosocial work environment (ibid. 1054).

On the basis of these observations about current deficiencies, a group of organizations and researchers have developed PAS 1010. It is compatible with OHSAS 18001, ISO 9000, and ISO 14000, all of which are based on the PDCA approach. The creation of PAS 1010 took place as a negotiation among the different stakeholders, including the European Trade Union Confederation, the Engineering Employers' Federation, WHO, EU-OSHA, and British Standards Institution (BSI). It should be noted that in the process of creating PAS 1010, disagreement among these stakeholders developed regarding the possibility of creating a British Standard within the field of psychosocial work environment, and the end result has so far been the guidance and not a standard:

> "However, some of the stakeholders involved in the Steering committee were not enthusiastic about this option and pointed out the limitations of an OHSAS type standard for psychosocial risk management. This reaction might have to do with the complex nature of psychosocial risks, the fact that they cannot be measured and managed in objective – technical manner, and probably also the fact that ISO and OHSAS types of approaches are much better in managing operational problem solving than to address more structural issues such as work organization." (Leka et al., 2011: 1054)

PAS 1010 offers guidance to and information about the management of psychosocial risks. It is based on principles (PDCA) similar to OHSAS 18001; however, it has a broader scope by also including work organization and management, which is not addressed by prevailing standards:

> "The overall risk management process goes further and seeks to involve employees in the prevention of psychosocial risks and not by requiring them to simply change their perceptions and behavior." (BSI, 2011: 10)

Psychosocial risks are understood to have many causes and no quick fix solutions (BSI, 2010). In addition, the guidance includes a more participative approach than prevailing standards by emphasizing shared responsibility between employees and employers in assessing and reducing risks (Leka et al., 1055). The participative approach includes the recognition of employees as experts in their jobs:

> "An effective model for psychosocial risk management places particular emphasis on the central status of the workers as 'experts' in relation to their own jobs." (BSI, 2011: 9)

PAS 1010 can be viewed as an attempt to compensate for deficits in the prevailing OHS management standards by creating a supplement based on similar logics. PAS 1010 therefore offers a possibility for discussing the potential of using standards in an area in which the subject matter is multi-causal, complex, contextual, subjectively experienced, and to some degree political, and in this way, PAS 1010 deals with the regulation of topics that the sociological discussion of standards have pin pointed as being particularly difficult for international standards to address.

Discussion: does PAS 1010 create new standards?

The potential of PAS 1010

Both in the introduction to PAS 1010 and in the main body of the text the domain of psychosocial work environment and the management of psychosocial work risks are acknowledged to be of a qualitatively different nature than more traditional OHS issues. First, psychosocial work environment issues are complex. They often have several causes that may not be easily identified nor related to separate incidents, and they are interdependent in the way that problems of psychosocial nature often relate to and impact on other work environment areas. The result is (as stated in the text) there are no "quick fix" solutions to most psychosocial work environment issues. Second, psychosocial work environment issues relate to management and organization of work; hence, it touches on the managements' prerogative. In other words, the guidance does not confine psychosocial risks to individual workers' behavior or view such risks as being solvable alone by technical preventive tools. Third, a participative approach is advocated in order to identify and prevent psychosocial work environment risks for two reasons: the nature of psychosocial work environment problems are considered to be subjectively experienced as well as related to objective working conditions, and consequently workers are "experts" in their own psychosocial work environment. The participative approach rests on a qualitatively different notion of workers involvement compared with the traditional standards, and it specifies that workers' professional knowledge is the foundation of risk prevention within the management of psychosocial risks. The participative approach is also reflected in the guidance's acknowledgment of the role of social partners, the functioning of industrial relations as well as the condition that there is "the will of social partners to negotiate as equals" (BSI, 2011:3). Fourth, the guidelines rest upon the notion that a successful management of psychosocial risks must have a clear focus on the particular work context by drawing on prevailing scholarly knowledge of work domains influencing work-related stress and specifying key issues such as job content, workload, and influence/control (BSI, 2011:9). Finally and of importance to the specific monitoring and reviewing performance, the guidelines emphasize that both quantitative and qualitative information can be included in a systematic measurement of performance.

The dilemmas in PAS 1010

Although PAS 1010 is not a British Standard, it is built on similar principles as OHSAS 18001, mainly the PDCA approach that implies relying on the development, monitoring, and reviewing of a range of procedures including internal as well as external audits. It follows that the generic social mechanisms inherent in international standards are also at work in PAS 1010, although it should be emphasized that no empirical studies of PAS 1010 have yet been published. However, by analyzing the text itself, it is possible to detect ambiguities related to the four generic social mechanisms in standards, which we discussed above: the technical knowledge base of standards,; the focus on procedures and audits, the question of local contexts, and finally the creation of standards by stakeholder negotiations.

Regarding *the technical knowledge base*, PAS 1010 is concerned with building a management system. Although this includes a concern with the psychosocial work environment as well as an expectation that the management system will (continuously) improve the psychosocial work environment, this focus has some implications that are related to the knowledge base of standards. PAS 1010 acknowledge that the psychosocial work environment is a product of interactions that cannot always be traced and are inseparable from subjective work experiences. It is also acknowledged that psychosocial risks are highly contextual and related to structural conditions, for example, work organization and employment conditions. However, the guidelines also specify that psychosocial risk management is systematic, evidence-informed as well as evidence-driven. We suggest that the term evidence-*informed* seems to indicate something different from the much stronger term evidence-*based* used in OHSAS 18001. However, it is not specified how this different terminology is to be understood and how it will create new ways of actually evaluating compliance and performance. The guidelines in other words attempt to combine the technical and decontextualized knowledge base with an inclusion of the local and complex social context. The ambiguity of these ways of conceptualizing knowledge is dealt with in different ways. For example, the most detailed and contextual information, for example, about what causes work-related stress is not in the text, but placed in an appendix. The fact that the actual text that outlines the requirements to performance is brief and lacks the contextualization that is described in the appendix, makes it easier to streamline risk assessment, and emphasizes the possibility of creating a clear knowledge base of risk prevention. In this way, PAS 1010 implicitly reproduces a mono-causal logic and technical knowledge base which resembles that in OHSAS 18001. This tendency to reproduce the logic of OHSAS 18001 can also be found when we look at the type of psychosocial issues that PAS 1010 addresses. We see a clear tendency to forward aspects of psychosocial work environment that can be conceptualized as single/isolated incidents that are targeted in the system by being reported as "near misses" and accidents (e.g., as single acts of violence, harassment, and bullying). It follows that the dimension of the psychosocial working environment that can be "objectified" thereby becomes the most visible indicator of psychosocial work environment at a work place.

Turning to the generic tendency in standards *to focus on procedures* and the basis of monitoring systems in audits, PAS 1010 has a clear focus on the procedures, for example, monitoring and documenting the risk assessment process. However, it does provide specific guidelines on, for example, which psychosocial risks to assess. The overall emphasis is on establishing, implementing, and maintaining procedures for the identification of risks. Consequently, the initial focus on PDCA may result in a migration of the more detailed guidelines on the production of hazards to a concern with the procedures and processes established in order to ensure risk prevention.

Regarding *standards as abstract rules that must be translated into local knowledge* (as well as translated back into abstract rules in order to show compliance), the PAS 1010 does seem to offer a list of contextual and organizational areas of concern. Here therefore, the guideline does not only consist of abstract rules but also on specific guidelines that may be easily adapted to different local contexts. It seems therefore that PAS 1010, by including a range of concrete suggestions and specifications on what part of the work context that needs to be included in risk assessment, makes it easier to resolve the generic problem of local translation inherent in standards.

Finally, standards have been criticized for not being based on scholarly knowledge but on *stakeholder negotiations*. To some extent, this is the case with PAS 1010 as well. Accounts of the process involved in creating PAS 1010 (Leka et al., 2011) suggest that disagreements about the extent to which standards might actually be the best solution in the regulation of the psychosocial work environment have resulted in some stakeholders not wanting to support the guidelines becoming a standard. In particular, it seems that disagreements about the objectivity of psychosocial work environment issues and the lack of acknowledgement of many of these issues are largely political by nature, preventing agreement in this area.

Conclusion: How can international standards contribute to the regulation of psychosocial work environment issues?

International standards are increasingly being used as means of regulation in a global labor market. This has raised questions about how such standards can contribute to OHS in general and to addressing and controlling growing psychosocial work environment problems in particular. Prevailing OHS standards, particularly OHSAS 18001, have been criticized for not adequately addressing increasing problems of the psychosocial work environment such as work-related stress and burn-out (Leka et al., 2011) as well as specific hazards such as employment insecurity, work intensification, and lack of influence (Hohnen & Hasle, 2011; Walters & Frick, 2000).

We have defined international standards as abstract rules claimed to be voluntary, have a source, and be explicit. International standards store knowledge in abstract rules, which make them suitable to deal with technical, monocausal knowledge rather than with the kind of professional practice knowledge that characterizes the knowledge relevant for the understanding of psychosocial work environment problems. The focus in standards is on developing and documenting procedures and processes rather than the subject matter of the work environment itself. In particular, in the case of the psychosocial work environment—which has many causes, is subjectively experienced, and is also highly political—this focus does not ensure the inclusion of all relevant issues. Furthermore, the idea that risks can be controlled by audits presupposes that psychosocial work environment can be related to (visible) non-compliance behavior rather than the structural and organizational context that is often pointed out as crucial by researchers. Finally, international standards need to build on abstract knowledge in order to become widely used – hence, standards must be translated into local practice that again must be translated back into abstract rules in order to be monitored within the system. There are several implications of this latter point. First, standards may not create homogeneity, but may indirectly promote variation by creating space for local adaption. Although this opens opportunities for developing local solutions aimed at solving local work environment issues, this also raises concern about the extent to which standards ensure a certain quality level of (psychosocial) working environment in practice. Second, the abstract nature of standards offers limited concrete guidelines for organizational management of psychosocial work environment problems. Finally, the fact that local practices also have to be 'translated back' to a more abstract level in order to document compliance with the standard, may create a certain space of possibilities, privileging solutions that may easily be monitored by audit procedures.

The development of PAS 1010 can be interpreted as an attempt to develop a different type of thinking within the framework of international standards, and as such, it offers an interesting case of analysis. The analysis of PAS 1010 shows that it is possible to diminish some of the problematic tendencies of the abstract standards such as OHSAS 18001 without renouncing the very idea of risk management by standards as such. PAS 1010 has managed to include a notion of workers as experts in their own work environment not only as receivers of information but also as responsible in identifying a range of psychosocial work environment hazards. PAS 1010 also provides concrete guidelines, based on prevailing knowledge about the type of organizational and structural configurations that may result in psychosocial work environment problems. As such, it acknowledges the fact that psychosocial work environment problems are complex and a product of an interaction of several factors that can be difficult to disentangle from each other. The focus on the production of psychosocial problems as originating from a broader of field of management and organization, including organizational areas of Human Resources and work, makes it possible to rely on prevailing research knowledge about what constitutes psychosocial work environment risks.

However, there are also drawbacks in PAS 1010 that may limit its potential. PAS 1010 has copied the model of PDCA from prevailing standards such as ISO 9000 and OHSAS 18001. These standards are characterized by having a clear focus on procedures and processes of documentation and by a reliance on abstract, technical, objectivist, and monocausal knowledge. It is not immediately apparent how such a knowledge base can be combined with the (proclaimed) different epistemological understanding of work environment problems and their causes in PAS 1010. Concretely, this dilemma is exemplified in differences in vocabulary. PAS 1010 rests on evidence-informed knowledge; however, it is not specified how this is supposed to be different from the stronger term evidence-based knowledge in OHSAS 18001. PAS 1010 claims to promote a participative and more structurally oriented holistic perspective on work and work environment; however, it still remains to be seen how the prevailing ambiguities can be reconciled in practice.

Our analysis of the standards behind certified OHS management systems indicates a range of possible problems; at the same time, the standards also suggest that the new ways of thinking in standards (as exemplified by PAS 1010) create openings for the adaption of technical standards to local needs. It is therefore important to carry out further empirical studies of the implementation of PAS 1010 by analyzing practices in organizations with OHS managements systems.

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The Wicked Character of Psychosocial Risks: Implications for Regulation

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ABSTRACT

Psychosocial risks constitute a significant problem in most workplaces, and they are generally considered more difficult to regulate than many other occupational health and safety risks. This article investigates the challenges of regulating psychosocial risks in the workplace. The difficulties lie in the particular nature of psychosocial risks: their complexity, uncertainty, value, and power divergences. Psychosocial risks therefore resemble 'wicked problems', typically characterized by unclear cause-effect relationships and uncertain solutions. We use the 'wicked problems' concept to show how workplace regulation, and particularly the enforcement in the form of inspection and audits of certified occupational health and safety management systems, face challenges in assessing psychosocial risks and the strategies used by regulators to overcome these challenges. While regulation has become more effective in several countries, a better understanding of the nature of the challenges is still needed. It is necessary to accept the uncertain nature of psychosocial risks in the search for more efficient regulation. Achieving more effective regulation should involve stakeholders in the workplace who deal with the prerogatives of management, and should help develop the competencies of the inspectors and auditors in the field.

KEY WORDS

Audit / inspection / enforcement / standards / wicked problems

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Introduction

Psychosocial risks are now widely acknowledged as a priority in occupational health and safety (OHS) (European Agency for Safety and Health at Work, 2012). Mental and physical health problems associated with workplace psychosocial risk factors are a significant, well-documented health issue (Cox et al., 2008; Goh et al., 2015; Leka et al., 2008; Leka et al., 2010).

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The research-based understanding of psychosocial risks has evolved from many quarters over a long period (Karasek, 1979; Karasek & Theorell, 1990; Siegrist, 1996). The awareness of and focus on psychosocial risks as a regulatory topic have grown slowly over many years. Norway was the first country to enact legislation focusing on the psychosocial work environment (Gustavsen, 1977), and even at that time, the shortcomings of a traditional labor inspection strategy were acknowledged (Gustavsen, 1980). In 1989, with the adoption of the EU OHS Framework directive (89/391/EEC), psychosocial risks became encompassed by the OHS regulation due to the general provision that 'The employer shall have a duty to ensure the safety and health of workers in every aspect related to the work' [Article 5(1)]. However, general provisions do not ensure enforcement. Denmark provides an example. Denmark has had a general provision since 1977, and the Labor Inspectorate began enforcement in the 1980s. However, political agreements have restricted the scope of the enforcement. In reality, genuine enforcement began only in the late 1990s (Rasmussen et al., 2011).

In several countries, OHS authorities are now taking more regulatory actions to deal with psychosocial risk factors, most often those related to bullying, harassment, and risks of violence (for an overview see Lippel & Quinlan, 2011). Outside the narrow confines of state regulation, many aspects of psychosocial risks have attracted attention. Hence, attempts are being made to revise management standards for OHS (such as OHSAS 18001) so that they encompass psychosocial risks (Hohnen & Hasle, 2011; Hohnen et al., 2014; Leka et al., 2011).

Research into the regulatory aspects of psychosocial risk is a relatively new field, with only few published studies (though see Kompier et al., 1994 for an earlier study). However, the researchers all point out the difficulties in regulating psychosocial risks compared with physical and safety risks (Hohnen & Hasle, 2011; Lippel & Quinlan, 2011; Starheim & Rasmussen, 2014). The regulatory difficulties appear in both the labor/factory inspection process (Lippel & Quinlan, 2011) and in the OHSM systems auditing process (Hohnen & Hasle, 2011; Jespersen et al., 2016). In this article, we use a broad concept of regulation (inspired by Jordana & Levi-Faur, 2004) by which regulation denotes all societal actions intended to change behavior for the greater good, and we therefore include both labor inspection and OHS management (OHSM) systems audits.

Regulation of psychosocial risks using the traditional instruments has been difficult because of difficulties in specifying standards and in enforcing these via inspection (Johnstone et al., 2011; Rasmussen et al., 2011). The same kinds of difficulties occur with the setting of management standards and subsequent related audits of OHSM systems (Hohnen et al., 2014). The few studies available have not focused on the underlying causes of these difficulties, much less the consequences for regulation strategies. It is the aim of this article to help fill this research gap. We do this by presenting a theoretical analysis of the nature of psychosocial risk and comparing that to some of the prevailing strategies for regulation of psychosocial risks. In our analysis, we focus especially on the workplace activities in terms of inspection and third-party audits. Our analysis builds on the existing studies of regulation as implemented in practice. The descriptions of regulatory practices are based on the special issue of *Safety Science* on regulation and inspection of psychosocial risks (Lippel & Quinlan, 2011) and traces older and recent literature from that reference.

In this study, we introduce the concept of 'wicked problems' (Head & Alford, 2013; Rittel & Webber, 1973) as a theoretical framework for understanding psychosocial risks. We argue that these psychosocial risks share important features of 'wicked problems', notably high levels of social complexity, uncertainty, and divergence of value. We conclude that regulation of psychosocial risks may require revising the traditional regulation approach focused on checking specification standards and instead relying on greater use of procedural enforcement and a professional reflexive judgment of the psychosocial risk management process.

The common thread in our article is the 'wicked problems' concept. Hence, using the existing literature, we elucidate what we consider to be the uniquely 'wicked' features of psychosocial risks compared with physical risks. We then describe the consequences of these features for the regulation of psychosocial risks as described in the literature, presenting some examples of psychosocial risk regulation. In the final section, we discuss the implications of this understanding of psychosocial risk for future development of regulation.

The nature of psychosocial risks

In recent decades, significant changes have taken place in the organization and management of work. These changes have resulted in increasing attention being paid to psychosocial risks and new challenges in the field of OHS (Bluff & Gunningham, 2004; European Risk Observatory Report, 2007). The control of psychosocial risks differs from the control of more conventional OHS risks, as psychosocial risks cannot be managed, measured, and observed in an objective and technical manner (Leka et al., 2011). Cox et al. (2000) define psychosocial risks as 'those aspects of work design and the organization of management of work, and their social and organizational contexts, which have the potential for causing psychological, social or physical harm.' The content of psychosocial risks can be summarized in terms of the risks related to different job characteristics, work environments, and organizational characteristics. Typical psychosocial risks—or 'hazards' as they are termed by Leka & Cox (2010)—are summarized in Table I. The most significant of the emerging psychosocial risks is related to new forms of employment contracts that generate or exacerbate job insecurity, intensify work input, or create higher emotional demands (European Agency for Safety and Health at Work, 2012; Quinlan et al., 2001).

Consider this ensemble of risk factors, a number of key characteristics distinguish psychosocial risks from most other occupational risks. Psychosocial risks are often multicausal, contextualized, rarely directly visible (often not directly observable), and highly political or politicized (relating, for instance, to the employer prerogative) (Hohnen et al., 2014). Moreover, psychosocial risks, unlike most physical OHS risks, are to a large extent determined by the way in which people perceive them and are therefore dependent on subjective differences in the perception of a problem or risk (Rick & Briner, 2000). These variable, subjective perceptions make it difficult to establish a fixed set of norms and prescriptive standards that could be observed and measured objectively (Hasle & Petersen, 2004; Johnstone et al., 2011). Characteristic of psychosocial risks is their connection to the management and organization of work and thereby also to the

Table 1 Psychosocial hazards (Leka & Cox, 2010)

Content of work	**Risk factors**
Job content	Lack of variety or short work cycles, fragmented or meaningless work, underuse of skills, high uncertainty, continuous exposure to difficult clients, patients, pupils, etc.
Workload and work pace	Work overload or too little work, machine pacing, high levels of time pressure, continually subject to deadlines.
Work schedule	Shift work, night shifts, inflexible work schedules, unpredictable hours, long or unsociable hours.
Control	Low participation in decision-making, lack of control over workload, pacing, shift working, etc.
Environment and equipment	Inadequate equipment availability, suitability or maintenance; poor environmental conditions such as lack of space, poor lighting, excessive noise.
Context of work	
Organizational culture and function	Poor communication, low levels of support for problem solving and personal development, poor managerial support; lack of definition of, or agreement on, organizational objectives.
Interpersonal relationships at work	Social or physical isolation, poor relationships with superiors, interpersonal conflict, lack of social support, harassment, bullying, poor leadership style, third-party violence.
Role in organization	Role ambiguity, role conflict, and responsibility for people
Career development	Career stagnation and uncertainty, under-promotion or over-promotion, poor pay, job insecurity, low social value of work.
Home-work interface	Conflicting demands of work and home, low support at home, problems relating to both partners being in the labor force (dual career).

power disparity in workplaces. Psychosocial risks are rooted in the employers' ability to organize work tasks, allocate resources, and manage operations that in turn create the risks at work (Walters, 2011). The explicit overlap between psychosocial risks and industrial relations is reflected in the differing or directly opposing interests and the imbalance of power with regard to work organization (Moncada et al., 2011). Employers and workers often have not just different but directly conflicting interests (Nichols & Tucker, 2000), and the imbalance of power between employers and workers makes it hard for workers to challenge the employer's prerogative. In terms of prevention, addressing psychosocial risks therefore involves identifying risk factors arising from the work organization and management. For these reasons, the prevention of workplace psychosocial risks is difficult to address (Leka et al., 2015), as it entails challenges to management practices and the managers' exercise of power. Managers tend to avoid confronting issues of power and management style; however, it precisely these practices that is critical to an understanding of how psychosocial risks and related occupational illnesses evolve.

Wicked problems

The nature of psychosocial risks shares many characteristics of what are termed 'wicked problems' (Rittel & Webber, 1973). The wicked problem concept has proven useful for understanding certain complex issues in modern society that require solution strategies, which differ from the technical-rational decision-making approach. Wicked problems thus differ from 'tame' problems in which elements of the problem are more clearly definable and solutions identifiable.

The 'wicked problems' construct was introduced more than 40 years ago by Rittel & Webber (1973). It was based on a critique of the predominant technical-rational approach to decision-making, planning, and implementing of social policy, especially related to complex issues (Head, 2008). Since then, the wicked problem concept has gained popularity due to its ability to provide understandings that could be helpful in meeting the challenges faced by today's policy-makers, scholars, and practitioners. Wicked problems are generally seen as linked to the complexity of elements, subsystems, and interdependencies and to the uncertainty in relation to risks, consequences of action, and changing patterns. Wicked problems reflect situations where there is a divergence and fragmentation of viewpoints, values, and strategic intentions (Head & Alford, 2013).

Rittel & Webber (1973) originally identified 10 primary characteristics of wicked problems, while Weber & Khademian (2008) later elaborated on these characteristics with regard to the relationship between the challenges from wicked problems and the strategies to meet these challenges. Weber & Khademian noted the following key features:

- Precise causes and effects are difficult to identify;
- Problem-solving process is fluid;
- Little, if any, consensus regarding problem definition or identification of solutions;
- Multiple stakeholders;
- Diverse perspectives;
- High degree of interdependence among stakeholders;
- Many trade-off among competing values; high conflict potential;
- Increased political and social complexity;
- Informal, socially embedded, and diverse sources of knowledge;
- Cannot be solved 'once and for all'; solutions are provisional and uncertain.

Head & Alford (2013) identify a spectrum of problems types that would not only help to explain the features typical of wicked problems generally but also shed light on the differential features and intensities of specific problems. Not all problems are either tame or wicked. At one end of the spectrum are unambiguously tame problems, that is, those with low levels of complexity and diversity. For such tame problems, both the definition of the problem and the likely solution are clear. Along the tame-wicked continuum, there are degrees of wickedness. The more complex and diverse the situation, the more wicked the problem. For the most wicked problems, both the problem definition and the solution are unclear. The character of such wicked problems can therefore be quite different according to the degree of wickedness, implying a range of appropriate responses to more or less wicked problems.

Responses to wicked problems

The distinctive characteristics of wicked problems require specific approaches for addressing them. Head & Alford (2013) suggest three strategies that can increase effectiveness in dealing with wicked problems:

1) the problems have to be seen from multiple perspectives;
2) a focus on creating a collective learning culture based upon collaborative discussions of strategies; and
3) effectively engaging many stakeholders in the problem area.

In addition, they emphasize that one possible way to address wicked problems may be systems thinking in a nontechnical sense (see also Senge, 1990). Systems thinking attempts to overcome the mechanistic and linear metaphors of 'command-and control.' Instead, systems thinking employs a holistic approach, acknowledging that social knowledge is provisional and context-dependent. Systems thinking also entails taking account of a complex web of inputs, processes, and outputs that can lead to desired outcomes.

Given the complex nature of wicked problems, the knowledge challenges are particularly acute. Weber & Khademian (2008) point out that any effort to effectively tackle wicked problems requires efforts to draw on broad knowledge bases, from the technical and scientific to the local and context dependent. Moreover, it is necessary to develop usable new knowledge that can be applied to solving or ameliorating the wicked problem. Shared knowledge rather than command and control can form the basis for the kind of cooperation that can tackle wicked problems.

Psychosocial risks as wicked problems

The wicked problem construct can help to provide a better understanding of the challenges involved in regulating psychosocial risks, in so far as so many features of psychosocial risks can be characterized as wicked problems. We highlight these features in Table II.

While psychosocial risks thus share many key features of wicked problems, not all psychosocial risks are equally wicked. Some elements of risks resemble more conventional, 'tame' risks. Protection against violence at work in the form of, say, bank robberies or violent social clients may partly be relatively easily achieved by technical means, such as alarms and physical barriers, even though the causes of such violence may often be wicked and beyond the control of the workplaces. While most psychosocial risks have a wicked character compared with most physical risks, wicked elements can also be found in physical risks. Some workplace accidents, for example, can be prevented by a number of relatively simple technical means, such as constructing physical barriers between the employees and the hazard, but when it comes to human behavior, even the most straightforward interventions share several features with wicked problems. Another example is musculoskeletal disorders (MSDs) that also exhibit wicked characteristics. It has been found that MSD may be caused by psychosocial risks alone or in combination with physical strains (Hauke et al., 2011), while for health care workers, the physical strain from lifting and carrying patients is also influenced by management practices and individual behavior.

Table II Comparison of key characteristics of psychosocial risks and wicked problems

Wicked problems	Psychosocial risks
Precise causes and effects are difficult to identify	Most potential effects, such as stress and depression, involve several psychosocial risks as well as nonwork-related causes and marked by considerable individual differences. Effects of interventions are partly unpredictable and unintended (the effects of interventions depend on employees' interpretation of management intentions).
Problem-solving process is fluid	A solution for one individual may not work for another (a specific work task might be viewed as a positive challenge by one person but as a stressor by another). A solution may alter the understanding of the original problem (stress prevails despite several different attempts to solve the problem).
Little, if any, consensus regarding problem definition or identification of solutions	Even though an overall consensus (Tab. 1) exists on the list of possible risk factors, there is no agreement on their relative importance, the level of acceptable risks, or on possible solutions.
Multiple stakeholders	In the optic of OHS legislation, psychosocial risk may be reduced to a basic relationship between employer and employee, but the realities of organizational life mean that effects and solutions are influenced by numerous social relationships between groups of employees, managers at different levels, and by external stakeholders.
Diverse perspectives	The many different stakeholders rarely share understandings and solutions to psychosocial risks due to differences in interests between management and employees.
High degree of interdependence among stakeholders	Workable solutions depend on involvement of many stakeholders at the same time.
Many trade-offs among competing values; high conflict potential	Solutions to psychosocial problems often interfere with management prerogatives, thus creating potential conflict between the rights of ownership and the protection of employees.
High degree of political and social complexity	The competing values and potential conflicts are mirrored at the societal level, where regulators find it difficult to establish a stable, objective basis for regulatory measures.
Informal, socially embedded, and diverse sources of knowledge	Research in psychosocial risks provides important knowledge, but compared with expert knowledge of physical risks, it is the subjective experience of the individual and groups of employees and managers that determines the range and effectiveness of feasible actions.
Cannot be solved 'once and for all'; solutions are provisional and uncertain	Psychosocial risks are embedded in all social relations; their dynamic character requires continuing solutions, thus entailing perpetual uncertainty.

Psychosocial risks and implications for OHS regulatory enforcement

All enforcement of legislation builds on setting acceptable standards[1], which are used to assess compliance with the legislation. In many cases, however, it is not possible for regulators and enforcers to set clear threshold values for a safe and healthy psychosocial work environment, and this constraint has impeded the effectiveness of traditional approaches to regulatory enforcement. Inability to set objective threshold values is certainly also a problem for some physical risks, especially those that include human elements in connection with accident prevention and ergonomic risks.

Viewing psychosocial risks as wicked problems can be a useful analytical framework for comprehending such difficulties. Together with the rapid developments of society and technology—and hence work—this forms the context for the move from a command-control approach to a more reflexive approach to regulation (Wilthagen, 1994). The reflexive approach focuses on processes and systems in which improved management of health and safety is pursued (Walters et al., 2011). The command and control regulatory approach is based on an assumption of transparent cause-effect relationships, to which expertise can be applied and then transformed into measurable enforcement levels (Hasle & Sørensen, 2011; Wilthagen, 1994). Command and control is most appropriate when the effective solutions are known (Bluff & Gunningham, 2004) or when the problems are tame, a state of affairs that rarely applies to psychosocial risks. As part of this regulatory development, the use of legislative standards has changed from the traditional specification standard that formed the basis for command-control enforcement to new types of standards, which, alongside 1) specification standards also include 2) general duties, 3) performance standards, and 4) systematic process and systems-based standards (Bluff & Gunningham, 2004).

The four types of standards are often used in combination. All four are deployed in the regulation of psychosocial risks, although the performance approach is deployed less frequently in practice. The general duties approach is found in the EU Framework Directive from 1989 as well as in the legislation of the Nordic countries and many other countries (Lippel & Quinlan, 2011). Here, the legislation imposes a general obligation on the employer to ensure a safe and healthy work environment, but this stipulation does not exclude psychosocial risks. The systematic process and systems type of standard approach is used, for instance, in the provisions for systematic risk assessment as required by the EU Framework Directive that must also include psychosocial risks. The more extended requirements for systematic processes and systems contain some examples of public requirement (Frick & Kempa, 2011), but in this case, regulation is often left to OHSM system standards such as OHSAS 18001. In principle, these standards are voluntary, and private and public organizations can obtain OHSM system certificates that are subject to third-party audits. However, such OHSM systems are in some cases integrated into public regulation regimes (Jespersen, Hohnen & Hasle, 2016). Frick & Kempa (2011) have offered some critical evaluations of the risks involved in delegating both regulatory standard setting and regulatory monitoring and enforcement to private actors.

The new ways of regulating psychosocial risk are generalized in that the legislation contains general provisions about duties and processes, and the application of such broadly formulated requirements constitutes a challenge for enforcement of psychosocial regulation. Inspectors in the public regimes and auditors in the certification regime

face the problem of checking whether risk assessment and other systematic management procedures are operating effectively, and whether such measures in fact ensure a safe and healthy psychosocial work environment. The lack of detailed specifications and the wicked nature of many psychosocial risks make it difficult to assess whether the work environment is appropriately safe and healthy. It is therefore necessary for inspectors and auditors to establish operational procedures so that psychosocial risks can be amenable to inspection and audits. In the next sections, we describe examples of the attempts to establish such procedures, first in the sphere of public regulation and in a subsequent section in the private realm of voluntary OHSM systems standards.

Strategies for dealing with psychosocial risks through public enforcement efforts

The EU Agency for Occupational Safety and Health, in an evaluation of the achievements of OHS regulation, concluded that while there has been some degree of success in identifying and reducing physical and technical risk factors in the work environment, no comparable success has been achieved in the regulation of psychosocial risks (Eurofound, 2014). Enforcement in this field is in its infancy, and much ground needs to be covered before efficient operational strategies can be considered to be in place. It is therefore interesting to analyze some of the current public strategies and assess the extent to which they have found ways to cope with the wicked nature of psychosocial risks. As stated previously, the public regulation of psychosocial risks has been developing for several decades, but only few examples are described in the scholarly literature.

A thematic issue of the journal *Safety Science* devoted to 'Psychosocial hazards in the workplace: challenges for regulators labor inspectors and worker representatives' (Lippel & Quinlan, 2011) discussed issues of regulation and enforcement. Further indications of progress in this field are provided by a recent report on workplace inspection of the psychosocial work environment coauthored by representatives from all five Nordic labor inspectorates (Hansen et al., 2015). The *Safety Science* articles and the Nordic report indicate that there are severe regulatory challenges, as exemplified by the Swedish difficulties with inspection of the psychosocial work environment (Bruhn & Frick, 2011). From these publications, we have selected two cases that have been subject to sufficient scientific scrutiny enabling them to be reliably assessed. They also represent quite different public strategies for enforcement of psychosocial work environment regulation with a focus on enforcement. The cases are 1) inspection of psychosocial risks in Denmark (Rasmussen et al., 2011; Starheim & Rasmussen, 2014), and 2) the more voluntary approach to management standards in the UK (Leka et al., 2011; Mellor et al., 2011).

Tools for government inspection of psychosocial risks in Denmark

One example of the development of a traditional enforcement strategy in order to cover psychosocial risks is provided by the Danish Working Environment Authority (Eurofound, 2014; Rasmussen et al., 2011; Starheim & Rasmussen, 2014). In 1995, the Working Environment Authority and the social partners concluded a political agreement that enforcement of regulation of psychosocial risks should be restricted only to those

risks related to the individual's job function, whereas risks related to implementation of management strategies and the employers' prerogatives are not included and thereby not regulated.

On the basis of a minor revision of the Working Environment Act in 2004, the Danish Working Environment Authority developed a guidance tool for inspection of psychosocial risks. The guidelines cover a broad range of psychosocial risk factors associated with work organization. The Authority has developed a practice whereby inspectors assess a variety of psychosocial risks during all ordinary inspections, as well as during those inspections specifically targeted at psychosocial risks. The inspection procedure is tailored to the main sectors, and the result is a 24-sector guidance tool, which can help the inspectors assess psychosocial risks. The factors assessed cover the most important and prevalent psychosocial risks (quantitative demands related to workload and pace of work, emotional demands, work-related violence, traumatic experiences, night and shift work, and bullying and sexual harassment). The focus during the inspection is to assess whether there is a balance between the prevalence of the psychosocial risk factors and the prevention measures taken by the enterprise. The inspectors use the guidance tools to prepare for the inspection as well as during the on-site visit. The goal is to gather concrete evidence of whether psychosocial risks are being properly managed. This is done by asking employees a set of questions about their daily work. In order to establish whether the workload is too high, for example, employees can be asked: 'Do you often have to skip lunch in order to complete your work?' 'Do you often have unplanned overtime work?' 'If you have too much work to complete in normal working hours, who can you consult in order to solve the problem?' Responses to these types of questions, when combined with other data such as the written risk assessments, may result in requiring the employer to make certain improvements. The inspectors use qualitative interviews to access the local knowledge of the employees and managers. In the wicked problem context, the labor inspectors, by means of the interviews, try to obtain access to the informal, socially embedded knowledge. All inspectors have been trained in order to ensure the inspectors' skills in assessing and evaluating psychosocial risks.

Starheim & Rasmussen (2014), in a study of inspection practices, found that inspectors work with a delicate balance between incentives and controls. The experience of the inspectors is that too much focus on control creates resistance. While a certain level of enforcement is necessary to secure motivation, it is beneficial during the inspection to achieve an acceptance of the problem from those working in the inspected workplaces; otherwise, concrete improvements are likely to be stalled.

This strategy is useful in solving part of the challenge posed by the wicked character of psychosocial risks. The general knowledge of psychosocial risks and the sector is used in combination with evidence from individual experiences to identify the problems, and employees and managers are then asked clarifying questions in order to involve them in acknowledging, assessing, and perhaps even taking steps to resolve the problem. In practice, the inspectors use the general provisions in the legislation as a kind of performance standard. They use the entire body of knowledge derived from different data sources to assess whether the employees are sufficiently protected. However, important constraints still exist. If the inspectors, based on the sum of the evidence collected, conclude that there is a psychosocial work environment problem, they must decide what kind of improvement notice they should issue. The inspectors still lack a detailed specification standard that could allow them to demand, for example, that the employees' workload

must be reduced. The improvement notices thus tend to be relatively vague, requiring, for instance, that the organization formulates an action plan to ensure a better balance between work demands and resources. Another possibility is to order the organization to carry out a questionnaire survey of the employees in order to establish the magnitude of the psychosocial risks in the workplace.

Management Standards in the UK

The Health and Safety Executive (HSE) in the UK employs a quite different strategy for regulating psychosocial risks. The HSE has acknowledged the fact that it is difficult to obtain support for traditional enforcement of legislation on psychosocial risks. Hence, they have pursued a voluntary strategy. In this connection, the HSE has developed a guidance tool focusing on how work-related stress should be tackled through good management practice (Cousins et al., 2004; Mackay et al., 2004; Mellor et al., 2011). The guidelines are known as the Management Standards Approach, focusing on risk assessment and preventive-organizational level interventions. The standards are voluntary in so far, as it is not obligatory for management to follow them; labor inspectorate might also consider other ways to prevent work-related stress as more suitable. Any alternative, however, still needs to be equivalent, and the standard functions as a 'guaranty' that sufficient measures have been taken. The Management Standards are not intended to be legally enforceable, but only to assist employers in complying with their legal obligations under the law. The basis of the approach is to compare desired states with actual or current states; hence, the approach is aimed at encouraging employers and employees to work together to identify psychosocial risks and adopt solutions to minimize these risks. There are six Management Standards referring to the main psychosocial risks factors in the workplace: job demands, control, social support, relationships at work, role ambiguity, and organizational change. Application of a Management Standard requires a stepwise approach that resembles a traditional risk assessment methodology (Mackay et al., 2004). The Management Standards Approach has been promoted by labor inspectors during their inspections, and they have also offered advice on how to carry out the stepwise approach.

Mellor et al. (2011), researching the implementation and effectiveness of the Management Standards Approach, emphasize that adequate knowledge of risk assessment and work-related stress is required to put such an approach into place. Mellor et al. showed that there was a lack of in-house competence in the companies, as the complexity of managing psychosocial risk factors requires specific knowledge. To our knowledge, there is no evaluation of whether the Management Standards Approach has had a broader impact on psychosocial risks in UK workplaces.

The UK voluntary approach avoids the difficulty of formulating legally binding provisions for psychosocial risks, and it works through inspectors who use their authority to promote the Management Standards. However, it must be expected that the approach will succeed only with those organizations that are already positively disposed toward a strengthened effort, whereas other organizations will probably refrain from using the voluntary guidelines offered by the inspectors. In cases wherein organizations are unwilling to take action on improving their psychosocial work environment, the regulatory system is left without a viable tool for enforcement.

Strategies for dealing with psychosocial risks through voluntary OHSM system standards

In the private sector, market-based OHSM systems have the same core principles for managing OHS risks as do mandatory systematic OHSM, that is, conducting risk assessments and managing OHS risks in a preventive manner (European Agency for Safety and Health at Work, 2012). Voluntary OHSM systems generally take the form of management standards that specify requirements for certification through third-party external auditing. These standards differ from legally mandatory systematic OHSM, as they tend to be more extensive and formalized in terms of specification requirements for the management procedures. Management standards are sometimes used in combination with legislation (as is the case in Denmark and The Netherlands), and in the most widely applied standard—OHSAS 18001—compliance with national OHS regulation is required.

The OHSAS 18001 standard claims to control all OHS risks (among others, to comply with all legal regulations) and is based on the approach known as Plan-Do-Check-Act (PDCA) (BSI, 2008). The OHSAS 18001 standard understands OHS risks as mono-causal, objectively measurable, and technical (Hohnen et al., 2014). A technical-rational approach to the decision-making process tends to dominate the discourses in voluntary OHSM systems, with similarities to command-control regulation (Frick & Kempa, 2011). However, the OHSAS 18001 standard does not distinguish between different types of OHS risks, and psychosocial risks are barely mentioned. As a consequence, the standard focuses mainly on technical accident risks, to some extent on physical risks, and hardly at all on psychosocial risks (Frick & Kempa, 2011). OHSAS 18001 treats psychosocial risks as tame problems that can be identified and solved in the same mono-causal and rational approach as that used for the technical control of physical risks. The expected new ISO standard 45001 on OHSM systems does not appear to alter this view of psychosocial risks (Committee Draft, ISO 2015).

The assumption of psychosocial risks as tame problems leads to difficulties in addressing psychosocial risk factors at work in certified OHSM systems. Leka et al. (2011) argue that OHSAS 18001 does not explicitly and adequately deal with psychosocial risks. This argument has been expanded at both the theoretical and the empirical levels in a number of studies (Frick & Kempa, 2011; Gallagher & Underhill, 2012; Hohnen & Hasle, 2011). Two new management standards have been published that focus specifically on regulating psychosocial risks, and they are trying to remedy the problem by specifically addressing these risks.

The first standard was launched in 2010 with British Standards 'Guidance on the management of psychosocial risks at the workplace, PAS 1010' (Publicly Available Specification). This was followed in 2013 by the National Standard of Canada's 'Psychological health and safety in the workplace: Prevention, promotion, and guidance to staged implementation' (CSA Group & Bureau de normalisation du Quebec). These new standards are compatible with the PDCA approach in OHSAS 18001, but they expand the understanding and management of psychosocial risks. The new standards take into account the different nature of psychosocial risks as compared with most technical OHS risks. Moreover, the standards recognize that psychosocial risks are context-specific, have many causes, and have no quick fix solutions. Finally, the new standards include a more contextual and participative approach than OHSAS 18001. The key principles of

assessing and managing psychosocial risk in the new standards are employee involvement and the integration of employees' expertise as reliable and valid sources of information (BSI Standard Institute, 2011; Hohnen et al., 2014).

These two new voluntary management standards thus try to tackle the shortcomings in OHSAS 18001 by taking into account the specific characteristics of psychosocial risks and their implications for the risk management process. However, while the new standards have certainly helped compensate for the shortcomings in OHSAS 18001, several issues remain. The voluntary standards focus on formalized structures and on the more documented and visible aspects of the psychosocial risk management system. However, a strong emphasis on formalities and documentation does not necessarily ensure proper psychosocial risk management and compliance with the regulatory standards (Bluff & Gunningham, 2004; Hohnen et al., 2014). It should be noted that no empirical research assessments of implementation of the PAS 1010 or the Canadian national standard have yet been published. Hence, while there are prospects that these new OHSM standards will help improve the psychosocial risk management, concrete experience and evaluations are lacking.

Audits of OHSM systems with a focus on psychosocial risks

The OHSM systems audits resemble the enforcement part of public regulation in the certification system. However, the OHSAS 18001 offers little or no guidance on how to carry out audits of psychosocial risks, and the auditors, like government inspectors, are left with a difficult task at the workplace. As a consequence, management of psychosocial risks is generally not included in audits (Gallagher & Underhill, 2012; Hohnen & Hasle, 2011; Jespersen et al., 2016; Robson et al., 2012). The exclusion of psychosocial risks has been related to the way audits of the management system are carried out (Hasle & Zwetsloot, 2011). Audits tend to focus on what is objectively measurable and visible, causing a bias toward safety and traditional OHS risks by which compliance measures can be objectified. Consequently, psychosocial risk factors are neglected (Hohnen & Hasle, 2011; Hohnen et al., 2014).

Audits of psychosocial risk management have recently been investigated in case studies of two Danish municipalities (Hasle et al., 2014). The findings show that the auditing of psychosocial risks was both difficult and complex. When the auditors in the study focused on psychosocial risks, they tended to focus on the most easily identifiable elements, such as formalities and documentation of risk assessments and policies about violence, harassment, and bullying. Much less attention was paid to other prevalent psychosocial risks and related preventive measures. It was therefore difficult for the auditors to issue noncompliance warnings with the standard, and if psychosocial risks were mentioned, it was in the form of nonbinding suggestions for improvements. The study concluded that the available methods were inadequate for auditing OHSM systems targeting psychosocial risks, and that the auditors lacked methods and understandings that could effectively address the psychosocial work environment (Hasle et al., 2014). The importance of qualified audits is further underscored by the fact that the national authorities in Denmark have decided to include the OHSAS 18001 standard in its legislation. Organizations with a certified OHSM system are then exempted from regular authority inspections, and the auditors will therefore

be the only external actor who assess the psychosocial as well as physical work environments (Hohnen & Hasle, 2011).

Discussion

Since the legislative reforms of the 1970s, numerous attempts have been made to regulate psychosocial risks at the workplace. However, the regulation has not been particularly successful, partly because of the failure to recognize the wicked character of most psychosocial risks. Although these risks can certainly be discussed without invoking the 'wicked problems' concept, an approach that recognizes the wicked character of psychosocial risks provides a useful understanding of the complex nature, particularly as pertains to the unclear cause-effect relationship, uncertain solutions, and multiple stakeholders with diverging interests. In the following paragraphs, we discuss the implications of a 'wicked' understanding for improving regulation of psychosocial risks. Both government regulators and other actors involved in certification of OHSM systems have partly recognized the challenges posed by psychosocial risks, and a number of recently developed approaches open new possibilities for inspection/auditing of these risks, even if they leave certain issues unresolved. The major challenges for inspection and audits concern the assessment of compliance with OHS regulatory standards, the link between psychosocial risks and employers' prerogatives, and the particular competences needed for the assessment of psychosocial risks.

Assessing compliance with OHS regulatory standards

Inspectors and auditors are required to assess compliance with regulatory standards on psychosocial risks at work, and depending on the risk, different types of regulatory standards have been incorporated into the OHS regulation. A command-control approach transformed into specification standards is reserved mainly for regulation of physical and technical risks, whereas the need to regulate psychosocial risks has resulted in the development of softer regulation methods emphasizing process and systems-based standards.

Process and systems-based standards are more open instruments than detailed specification standards. This makes the legislative requirements not only more elastic but also less precise. An inspector or auditor will thus find it more difficult to judge whether requirements are being met and whether employers are complying with the law. Furthermore, systematic processes and system-based standards allow considerable room for interpretation, again making it difficult to determine whether an employer has implemented preventive measures adequately and to specify which improvements are required.

Command-control inspections of specification standards are based on generalized technical, mono-causal expert knowledge, which is difficult to apply to the area of psychosocial risks. Psychosocial risks have characteristics of wicked problems: they reflect competing values, diverse perspectives, and different perceptions and interests among the stakeholders in the workplace; hence, the knowledge base in the area of psychosocial risk assessment is more varied. The inspector or auditor cannot act as the sole expert or arbiter of risk, nor can the inspector/auditor apply generalized technical expert

knowledge to the local and unique arena. The inspector/auditor has to make an assessment on the basis of the reported experiences of employees and managers and then adjudicate their interpretation in cooperation with the workplace stakeholders. Assessment of compliance is therefore developed in the encounter between those having situational knowledge of psychosocial risks and the generalized abstract knowledge of what constitutes psychosocial risks (Bruhn, 2006; Johnstone et al., 2011). In other words, compliance must be developed through explicit use of diverse sources of knowledge: the subjective and contextual knowledge of employees/managers combined with technical expertise and research knowledge of the auditor/inspector (Briner & Rousseau, 2011). Such a nuanced approach requires considerable inspection resources, which will be an important constraint both for inspectors and auditors.

Employer's prerogative

Workplace inspections also face the challenge of dealing with the employer's interests. As psychosocial risks are closely related to management's strategies and decisions, management may not be so accommodating in having inspectors and auditors interfering with their work organization. British authorities have therefore chosen not to enforce regulation of psychosocial risks, opting for a voluntary approach, while Danish authorities have set strict limitations on those issues that inspectors are allowed to address. Both strategies seem to open some possibilities for more effective knowledge about and control over psychosocial risks, but they also have clear limitations due to the employer's prerogative. The British strategy allows only few possibilities to take measures against unwilling employers, whereas the Danish strategy leaves certain problems—those related to management decisions—out of the picture. Examples of excluded problems are change management and job insecurity.

For auditors of OHSM systems, the system could be made simpler, as it is voluntary for employers to be certified, and the focus is explicitly on the management of psychosocial risks. To date, we have only few empirical studies of auditing practices on this issue, but problems can also be expected. External auditors have a client relationship to the employer, and it is likely that pinpointing problems related to OHSM systems or to management's practices would be cause for concern for both parties. Auditors would be concerned because a critique of management could lead to their losing a paying client, while management would be concerned in so far, as outsiders might be in a position to pinpoint problems related to the quality of their management practice.

Inspector and auditor competencies

The knowledge base for inspectors and auditors, as indicated earlier, has traditionally been generalized as technical, mono-causal expert knowledge used to assess whether risks are controlled with respect to regulatory standards and management standards. As experts, inspectors and auditors have used their expertise to assess problems that are largely of a tame character and that are directly observable. The wicked character of psychosocial risks changes the required knowledge base. Inspectors and auditors still need to have expert knowledge about psychosocial risks, but additional knowledge is

also necessary. Knowledge about organization and management is needed to a higher degree than is the case for traditional inspections and audits. In addition—and perhaps most important—assessing psychosocial risks requires inspectors and auditors to be able to discover, interpret, and assess the local employees' experience of psychosocial risks, the particular features of work that might constitute a risk in this workplace, and to make a judgment based on workers' personal experiences and attitudes.

Perspectives

The wicked nature of many psychosocial risks creates major challenges for regulation. In this article, we have focused on enforcement by inspectors and by auditors. The government authorities are pursuing different strategies to meet this challenge, with the UK and Denmark being examples of the differences between a noncompulsory and a more traditional enforcement strategy. Both these strategies show potentials for addressing psychosocial problems, but they each have their limitations, especially those related to the management prerogative. For the OHSM certification systems and particularly for audits, the focus on psychosocial risks is only just emerging. This new focus has resulted in newly established guidelines and standards, but the practical experience is still limited.

How can the understanding of psychosocial risks as wicked problems help in the development of proactive regulatory strategies? Our analysis of the difficulties in addressing psychosocial risk and the character of wicked problems points toward a number of possible solutions:

- The application of traditional prescriptive standards has limited possibilities in case of psychosocial risks. It will rarely be possible to set particular thresholds or other types of prescriptions.
- Efforts should be made to make assessments based on a combination of the generalized knowledge about psychosocial risks together with the contextual experience of employees and management in the concrete workplace.
- The resulting assessment should be compared with the performance standard approach, as inspectors and auditors have to assess whether the employer has protected the employees sufficiently against psychosocial risks.
- There is a need to develop both regulatory instruments and concrete tools in order to support this type of performance standard assessment. It could be provisions on the issues to cover in the assessment, such as change management or job insecurity, and it can involve concrete tools for the assessment, such as the interview guides prepared by the Danish Working Environment Authorities.
- This approach to inspections and audits calls for specific qualifications. Inspectors and auditors need to possess qualifications and knowledge of 1) psychosocial risks, health consequences, and related preventive measures (generalized knowledge base), 2) organization and management, 3) contextual knowledge of the sectors and type of work, and 4) facilitation skills in order to ensure a confident interview situation as well as dialogue about the results of the assessment. As standard prescriptions are not possible, it is crucial that the inspector or auditor is able to develop a shared problem understanding with management and employees. Otherwise, there will be little improvement in the psychosocial work environment in the workplace.

These findings and suggestions may open a space for relevant improvements in the regulation of the psychosocial risks. However, they cannot control nor do they eliminate the wicked character of psychosocial risks. It is therefore necessary to develop still deeper understandings of psychosocial risk, their consequences for health and well-being, and the possibilities for regulation. On the contrary, we also need to accept that psychosocial risks have inherent uncertainties created by the unclear cause-effect relationships, ambiguities, and conflicting interests. Moreover, it is essential to carry out further empirical research that can assess both the relevance of our suggested approach and provide new evidence of the effectiveness of different strategies to address psychosocial risks in the workplace.

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End Note

[1] The term 'standard' is a wide-ranging concept that includes several different types of standards. In this article, those standards related to legislation and enforcement are called 'legislative standards' and standards related to voluntary management standards, certification, and audits are called 'management standards.'

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Developing a concept for external audits of psychosocial risks in certified occupational health and safety management systems

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ABSTRACT

Psychosocial risks are closely related to work organization, management and organizational context. Therefore, the nature of psychosocial risks is complex and differs from more traditional OHS risks. The OHSAS 18001 standard explicitly claims to deal with all OHS risks, including psychosocial risks, and the audit is a key element in OHS management systems. However, the literature indicates that audits of psychosocial risk management are difficult and multifaceted, and the available practice excludes psychosocial risks from audits. Based on an analysis of the literature and available methodological approaches, we propose a new conceptual model for audits of psychosocial risk management. The model is grounded in the British "Guidance on the management of psychosocial risks in the workplace" (BSI, 2011), which has recently been developed to remedy the shortcomings of the OHSAS standard. The model builds on an interpretation of audit evidence that includes an integration of general scientific knowledge regarding psychosocial risks with local contextual knowledge. A key tool for the application of the integration is realistic evaluation, which provides the opportunity to assess the link between psychosocial risk management measures and expected outcomes. Another important tool is the qualitative interview, which is the primary method for data collection. The concept has important implications for the dominant audit practice and auditor competencies. It leads to an expanded knowledge base and a broader concept of audit evidence that further presupposes considerable auditor resources, and changes the required knowledge base and skills of auditors.

1. Introduction

Over the last few decades, changes to the world of work have affected workplaces considerably. These changes have resulted in a rise in psychosocial risks associated with the way work is designed, organized, and managed (Cox et al., 2000; EU-OSHA, 2007; Bluff and Gunningham, 2004; Walters et al., 2011). The majority of organizations have difficulty incorporating psychosocial risks into their Occupational Health and Safety (OHS) management practices, and the prevention of psychosocial risks is still challenging to address in workplaces (Leka et al., 2015; Iavicoli et al., 2014; EU-OSHA, 2014; Langenhan et al., 2013). Psychosocial risks at work represent a complex and diverse array of phenomena. They are related to a variety of job and organizational characteristics and working environments, and range from bullying and harassment to an array of organizational risks such as work overload, lack of social support, role ambiguity, and demand control or effort balance (Johnstone et al., 2011; Pejtersen et al., 2010; Cox et al., 2000). Psychosocial risks are acknowledged to be conceptually distinct from other more traditional OHS risks (I-WHO, 2008), and the majority are 'invisible', difficult to measure, intangible, multi-causal, subjective, and contextual (Hohnen et al., 2014; Johnstone et al., 2011). Moreover, psychosocial risks are generally considered to be sensitive and related to power, and addressing them directly may be seen as an interference in the employers' prerogative (Bruhn and Frick, 2011; Walters, 2011). Taken together, psychosocial risks have a strong resemblance to what can be characterized as "wicked problems" (Rittel and Webber, 1973; Jespersen et al., 2016b).

One way of controlling psychosocial risks is through the application of OHS management systems. Such systems can be certified according to the standard OHSAS 18001 (Occupational Health and Safety Assessment Series), which has gained considerable world-

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wide acceptance in the past decades (Frick and Kempa, 2011). The standard implies the option of third party certification, and claims to control all OHS risks, including psychosocial risks (OHSAS 18001, 2008). However, it is reported that the standard does not adequately address psychosocial risk factors at work (Leka et al., 2011; Hohnen and Hasle, 2011; Frick and Kempa, 2011; Abad et al., 2013; Nielsen and Hohnen, 2014; Jespersen et al., 2016a). In practice, the OHSAS 18001 standard narrows the scope of OHS and predominately focuses on technical accident risks, and physical risks (to some extent), while largely neglecting psychosocial risks (Frick, 2004, 2011).

A crucial element of certified OHS management systems is the audit, which is used to review and evaluate the performance and effectiveness of the OHS management system (Robson et al., 2012). It must, in principle, ensure effective control of all OHS risks, comply with national OHS regulations, and show continuous improvement of OHS performance (Frick and Wren, 2000). The audit has an evidence-based approach (ISO 19011, 2011), and auditors must collect evidential material that is sufficient to make valid and reliable judgments about the implementation and effectiveness of the OHS management system (Robson and Bigelow, 2010). However, it is not made clear how an evidence-based approach should be understood within the audit context. This has implications for the effectiveness of certified OHS management systems auditing. The present audit practice tends to focus on objectively measurable and directly observable issues, thus leading to a bias towards safety and traditional OHS risks wherein compliance can be objectified. Consequently, psychosocial risk factors tend to be excluded (Hohnen and Hasle, 2011, 2016; Hohnen et al., 2014; Hasle et al., 2014a; Jespersen et al., 2014, 2016a).

To the best of our knowledge, research concerning psychosocial risk management audit tools is limited to a recent study on developing and testing an internal audit tool in the oil and gas industry (Bergh et al., in press). While it is a quite comprehensive tool for use in internal audits, and it may be too extensive for external auditors to apply. Thus, there is a need for audit methods that can cover psychosocial risks in an adequate manner. The aim of this article is to develop a concept for an audit methodology that is able to capture the special character of psychosocial risk management. In order to do so, we have analyzed the present shortcomings of audits as well as the requirements for audits encompassing the relevant standards. We have therefore based the development of the concept on an integration of three separate analyses:

- The requirements for qualified audits as outlined in the OHS management standard OHSAS 18001, the guidance PAS 1010, and the ISO 19011 standard about the general audit principles.
- The challenges for audits of psychosocial risks where we use the concept of wicked problems (Rittel and Webber, 1973; Jespersen et al., 2016b) as an important point of departure for understanding the special nature of psychosocial risks.
- Expansion of the audit knowledge base with data collection and assessment methods that are suitable for psychosocial risks. This builds on recognized methods such as realist evaluation (Pawson and Tilley, 1997; Kazi, 2003) and qualitative interviews (Kvale and Brinkmann, 2008) as well as an expansion of the auditor competencies.

We use these three analyses to suggest the basic audit principles for psychosocial risks and to discuss the implications for auditor competencies. The article contributes by providing the first example of a potential way to carry out audits, one that is able to capture the special nature of psychosocial risks, thereby increasing the likelihood that these risks are integrated in certified OHS management systems.

The structure of the article is as follows. This introduction is followed by a presentation of the management systems standards OHSAS 18001 and PAS 1010 and an analysis of the key principles in auditing management systems. We then analyze the challenges of addressing psychosocial risk management within the established audit discourse based on findings from empirical case studies of certified OHS management systems in Denmark. This is followed by a discussion of available methods for audits of psychosocial risks. Subsequently, we merge these analyses into a general concept, which can handle the soft, invisible, and contextualized OHS risks. Finally, we discuss auditor competencies, and the challenges in applying our proposed conceptual model in audit practice.

2. OHS management systems standards and psychosocial risks

The OHSAS 18001 standard specifies requirements for OHS management systems in order to enable organizations to develop objectives and to achieve those objectives by controlling all their OHS risks, including psychosocial risks (Robson et al., 2007; OHSAS 18001, 2008). Managing OHS risks to the OHSAS standard is described as a systematic evidence-based problem-solving strategy (Leka and Cox, 2010). Systematic management of OHS risks is inevitably directed by evidence claims that determine the causes and effects. Renn (2008) categorized risks as linear or simple, complex, uncertain, or ambiguous, working with different approaches for risk management depending on the characteristics of the risk. However, the OHSAS standard does not distinguish between different types of OHS risks and it appears as if OHSAS 18001 treats psychosocial risks as linear or tame problems that can be identified and solved in the same mono-causal and technical-rational approach as that used for simple, visible, and tangible risks (Jespersen et al., 2016b). This approach in the standard may be one of the reasons for not adequately addressing psychosocial risk (Leka et al., 2011; Hohnen and Hasle, 2011; Frick and Kempa, 2011; Abad et al., 2013; Nielsen and Hohnen, 2014; Jespersen et al., 2016a). The importance of building on characteristics of psychosocial risks for the selection of the risk management approach (I-WHO, 2008; Leka et al., 2008, 2011) is reflected in the "Guidance on the management of psychosocial risks in the workplace", Publicly Available Specification 1010 (PAS 1010). This standard, which has recently been published by the British Standard Institute (BSI, 2011), is expected to help solve the special problems of psychosocial risk management. A similar Canadian standard (CSA Group and BNQ, 2013), has also been published.

2.1. PAS 1010

The management paradigm in PAS 1010 (BSI, 2011) is explicitly directed towards psychosocial risks. PAS 1010 is, as with OHSAS 18001, based on the PDCA model. The difference is that PAS 1010 distinguishes between different types of OHS risks, such as psychosocial risks, which are acknowledged to be of a qualitatively different nature than more traditional OHS risks. Psychosocial risks are understood as complex and multi-causal. Because understanding the specific context is necessary to assess psychosocial hazards and the risks they may pose, they cannot be managed in an objective and technical manner (Leka et al., 2008; I-WH0, 2008; BSI, 2011). Furthermore, the OHS scope is broader in PAS 1010 because it includes work organization and management as risk factors. It also applies a dynamic organizational perspective, as psychosocial risks are frequently directly related to changes in work that are continually taking place (I-WHO, 2008).

Another important difference between OHSAS 18001 and PAS 1010 is the level of employee participation. PAS 1010 includes a

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more participatory approach (Hohnen et al., 2014), which is particularly expressed by a recognition of the knowledge of the employees as valid and reliable evidence (BSI, 2011; Leka et al., 2011). The knowledge base for the psychosocial risk management approach in PAS 1010 is based on both scientific knowledge and knowledge of the organizational context (Leka and Cox, 2010; Hohnen et al., 2014). However, how the actual evaluation of psychosocial risk management should be carried out is neither specified in PAS 1010, nor which evaluation paradigm PAS 1010 is based upon.

To conclude, PAS 1010 was developed in such a way that it would be compatible with OHSAS 18001. The differences should therefore be regarded as complementary and not as mutually exclusive. The traditional OHS risk-management process is defined as an evidence-*based* problem-solving strategy, while the entire psychosocial risk management process in PAS 1010 is defined as an evidence-*informed*, practical-solving strategy (Leka et al., 2008; Leka and Cox, 2010). However, the difference between these two approaches when they are to be transformed into practical models is not elaborated in PAS 1010, and the implications for how the audit of these risk management approaches should be carried out in practice is therefore not clear. Moreover, it is not clear how the evidence-informed risk management approach in PAS 1010 is transformed into outcome and process evaluation, nor how the actual evaluation of compliance and performance will be measured (Hohnen et al., 2014). Despite these shortcomings, the key principles of psychosocial risk management can form a useful basis for the development of an appropriate methodology for auditing psychosocial risks in certified OHS management systems. This leads to the next part of the discussion, where we address the content and principles of auditing.

3. The audit process

The crucial point for the verification of an OHS management system is the third party audits. An audit can be understood as both a management tool and a control system (Power, 1997). According to the OHSAS standard, the purpose of an audit is to determine whether the OHS management system conforms to the requirements of the OHSAS standard, including compliance with national OHS legislation, proper implementation of the OHS management system, and the effectiveness in meeting the organization's policies and objectives (OHSAS 18002, 2009). The ISO 19011 standard provides the general principles and methodology for audits of management systems and specifies the competencies required by an auditor (ISO 19011, 2011). According to the ISO 19011 standard, an audit process is a *'systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled'* (ISO 19011, 2011:1). A key principle of auditing is assessment based on evidence, which is *'the rational method for reaching reliable and reproducible audit conclusions in a systematic audit process'* (ISO 19011, 2011:5). Power (1997) emphasized that the concept of evidence constitutes the heart of the operational dimensions of audits. Auditors must collect evidential material that is sufficient to enable a judgment to be formed and to verify assertions and events with appropriately collected and interpreted data. Verification and evidence are thus complementary concepts; auditors verify on the basis of evidence (Power, 1997). On the basis of the description of collecting and verifying data, auditing may be understood as a quasi-scientific method (Power, 1996).

The audit process is outlined in ISO 19011 (2011) and includes document review, preparing the audit plan, conducting the audit, and preparing the audit report. Prior to conducting an audit, documents from the organization are reviewed, including results of prior audits. Information from this review should be used in planning for the audit. The audit plan must include the objectives, criteria, methodology, and scope of the audit. Conducting an audit involves the process of collecting and verifying information. Collecting information and gathering evidence can be achieved through interviews, observations, and reviews of documents. In OHSAS 18002 (the guidelines for implementation of OHSAS 18001), it is pointed out that information relevant to the audit's objectives, scope, and criteria should be collected using appropriate methods. Auditors should ensure that a representative sample of the important activities is audited, that relevant personnel are interviewed, and that relevant documents are examined. Audit evidence can be quantitative or qualitative, and generating audit findings is performed by evaluating evidence against criteria. Only information that is verifiable should be accepted as valid evidence. Audit findings can indicate conformity or nonconformity with audit criteria, and nonconformities are specified in the audit report.

To conclude, the audit is founded on an evidence-based approach. Auditors have to judge the evidence objectively against pre-defined audit criteria in order to generate audit findings. Evidence is thus required as the basis for indicating conformities or nonconformities. However, both ISO 19011 and OHSAS 18001 have a somewhat open approach to the concept of evidence as well as to data collection methods. In general, audits have been criticized for their strong focus on formalities with limited consequences for tangible results (Power, 1997; Gallagher et al., 2003; Poksinska et al., 2006; Blewett and O'Keeffe, 2011; Boiral, 2012), and this problem is potentially even larger for audits of psychosocial risks. This is the issue which we will consider in the next section.

4. The challenges for audits of psychosocial risks

Several scholars have reported that the management of psychosocial risks is generally not included in auditing (Hohnen and Hasle, 2011; Robson et al., 2012; Gallagher and Underhill, 2012; Hasle and Zwetsloot, 2011; Jespersen et al., 2016a). The main reasons for this flaw in the system can be traced to two interlinked issues: (a) the nature of psychosocial risks and, (b) the understanding of evidence used in audits.

4.1. The nature of psychosocial risks

Psychosocial hazards can be defined as 'those aspects of work design and the organization of management of work, and their social and organizational contexts, which have the potential for causing psychological, social, or physical harm' (Cox et al., 2000). Based on this definition, the nature of psychosocial risks can be characterized by a number of features. Psychosocial risks, unlike most physical OHS risks, are, to a large extent, determined by the way in which people perceive them and are therefore dependent on subjective differences in the perception of a problem or a risk (Rick and Briner, 2000). These subjective and varying perceptions make it difficult to set fixed norms and prescriptive standards that can be observed and measured objectively (Hasle and Petersen, 2004; Johnstone et al., 2011). Psychosocial risks are connected to the management and organization of work and thereby also to the power disparity in workplaces. Psychosocial risks are rooted in the employers' ability to organize and allocate resources as well as to manage operations that, in turn, create the risks at work (Walters, 2011). In terms of prevention, addressing psychosocial risks therefore involves identifying risk factors that arise from the work organization and management. It is a particularly sensitive issue, as it entails questioning the actions of management and the exercise of power. Managers avoid issues concerning power and management and such practices are critical to an

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understanding of how psychosocial risks and related occupational illnesses evolve.

These features of psychosocial risk can be characterized as "wicked problems" for various reasons (Rittel and Webber, 1973; Jespersen et al., 2016b). The term "wicked problem" is used to characterize problems in society that are marked by unclear cause and effect relationships as well as complexity, uncertainty, and ambiguity in the problem-solving process (Head and Alford, 2013). Given the nature of wicked problems, the knowledge challenges are particularly obvious. To effectively manage wicked problems requires an effort to draw on a broad knowledge base – from general scientific knowledge to local context-dependent knowledge (Weber and Khademian, 2008; Head, 2008). Thus, the wicked problem construct can help to provide a better understanding of the challenges involved in managing psychosocial risks in practice. For a further discussion of the nature of psychosocial risks, see Jespersen et al. (2016b).

4.2. Understanding evidence

The purpose of auditing is to achieve valid and reliable evidence that can be used to improve the psychosocial risk management system and thus improve the psychosocial work environment. However, what can be considered as valid and reliable evidence and how it can be provided is a paradigmatic question (Dahler-Larsen, 2012; Pawson, 2006). In the guidelines for auditing management systems, the concept of evidence is not unequivocally defined, and it is unclear upon what paradigm the audit principles are based.

The original understanding of evidence-based approaches and methods is rooted in the biomedical field and is greatly inspired by the positivist paradigm, which has a narrow view of objectivity and evidence (Kvale and Brinkmann, 2008). OHS management, as well as the OHSAS 18001 standard, has its roots in an understanding of data from a safety engineering perspective. It fits well into the paradigm in which data are directly observable and quantifiable. Following this tradition, auditors tend to discard data that does not conform to these characteristics, and thereby exclude psychosocial risks from audits (Hasle and Zwetsloot, 2011; Hohnen et al., 2014). This possibility is supported by recent Danish studies in both the manufacturing industry (Granderud and Rocha, 2011; Hohnen and Hasle, 2011) and the public sector (Hasle et al., 2014a; Jespersen et al., 2014, 2016a; Hohnen and Hasle, 2016). These studies clearly indicate that psychosocial risks are either completely excluded, as in the manufacturing industry or, in the public sector, a focus on formal paperwork is evident for both internal and external audits. The studies also indicate that nonconformities are not used by the auditors and that they generally have limited competence in the field of psychosocial risks. External audits have attracted particular attention in Denmark because companies with an OHS management certificate are exempt from regular labor inspection, and the Office of the Auditor General has therefore recently criticized the quality of audits of psychosocial risks. The report questions whether the OHS management certification procedures are adequate with regard to managing psychosocial risks and whether certified OHS management systems contribute to providing an acceptable psychosocial work environment (Rigsrevisionen, 2015).

4.3. Key characteristics of audits of psychosocial risk management

By a combination of theoretical discussions, general studies of OHS management, and the more focused studies of management of psychosocial risks, we can highlight five key findings which must be considered for the development of qualified audits of psychosocial risks:

(1) Psychosocial risks have a wicked character. These risks are "invisible", social, and complex and therefore difficult to integrate in the traditional audit practice.
(2) Internal and external auditors have a focus on formalities as well as what can be observed directly, and it is thus difficult for them to assess the quality of the various elements in the psychosocial risk management process.
(3) Auditors do not indicate nonconformities in the actual psychological work environment, but only issue them on procedural errors.
(4) It is unclear in the dominant audit discourse what are considered valid sources of knowledge or information.
(5) Internal and external auditors lack both knowledge and skills with regard to auditing management of psychological risks.

Within the traditional audit approach, OHS risks have to be rigorous, objective, and thereby auditable (Power, 1996). However, psychosocial risks are neither rigorous nor objective. They are instead flexible and subjective, which makes them un-auditable within the traditional audit approach. Because of the difficulties of auditing psychosocial risks, there is a need to develop an audit methodology that can manage the wicked character of psychosocial risks and acknowledge organizations as dynamic and complex. In the next part, we discuss how the knowledge base for audits can be expanded in order to cover psychosocial risks.

5. The knowledge base for audits of psychosocial risks

Although the majority of psychosocial risks have this wicked and invisible character, audits must still respect the general principles for audits of OHS management systems. That is, the methodology must operate with a systematic data collection based on evidence that is verifiable, i.e., reliable, valid, and reproducible. In addition, the auditor must be independent of the activity being audited and maintain objectivity throughout the audit process. A key issue in meeting these requirements is an understanding of context. This is the basis for any interpretation of psychosocial risks because they are always dependent on the context in which they occur (Jespersen et al., 2016b). The context has a decisive influence on both the nature of the problem and of the intervention, and thus on the possible effects of an intervention (Pedersen et al., 2012). Knowledge of the relationship between intervention and effect will therefore also be contextual (Hasle et al., 2014b). Some basic information about the context of the workplace for auditing can be gathered from written sources, but the core information comes from management and employees, as it is their interpretation of the context that is forming their reactions to the psychosocial work environment. The involvement of both management and employees therefore constitutes a core element of the knowledge base. Active involvement, especially by employees, is not only important for collecting evidence, but also for the task of reducing psychosocial risks at work (Blewett and O'Keeffe, 2011; Leka et al., 2008; Walters, 2011; Frick, 2011). Employee involvement is thus important in all stages of the psychosocial risk management process, and this source of knowledge is necessary in order to collect valid and reliable evidence (Leka et al., 2008; BSI, 2011). It also follows that informal aspects – meaning how employees experience and interpret management measures – become even more important than formal aspects for understanding the causes of the psychosocial work environment and finding solutions for improving it (Bluff and Gunningham, 2004; Gallagher and Underhill, 2012).

Understanding the context and assessing the resulting risks are matters of judgment for the auditor. The questions an auditor

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should ask himself are: (a) what are the criteria for making this judgment? and, (b) how should the judgment be made? The challenge for psychosocial risks is that there are almost no clear standards for the control of the risks. While many standards exist for physical risks such as machinery guards and threshold limit values for chemicals and noise, such standards are unavailable for psychosocial risks. The standards are of a much more general nature and appear in the legislation as a general requirement for a safe and healthy work environment which, in most cases, would be reflected in the OHS policies included in an OHS management system. Nonconformity can therefore not be indicated exactly in the same way as it is done in the traditional audit approach, which is dominated by a command and control approach (Frick et al., 2000). Psychosocial risks are subject to soft and subjective regulation methods which, when transformed into performance and systems-based standards, are more imprecise and elastic than traditional standards (Jespersen et al., 2016b). Consequently, the majority of the audit criteria would be performance- and system-based. Therefore, the auditing criteria and evidence are subject to auditor interpretation, and indications of conformity or nonconformity are more difficult (Blewett and O'Keeffe, 2011). The auditor would be required to interpret employee statements and to make judgments based on whether requirements of the performance- and system-based standards are met. It requires the explicit use of different sources of knowledge, as the auditors have to assess compliance by combining the general knowledge regarding psychosocial risks with local organizational knowledge from diverse data sources (Leka and Cox, 2010; Bergh et al., in press; Jespersen et al., 2016b). This combination needs to be carried out in a systematic manner in order to fulfill the audit requirement. The principles of realist evaluation can provide the means of doing so. This concept will be explored in the next section.

5.1. Interpretation based on realistic evaluation principles

Realistic evaluation, proposed by Pawson and Tilley (1997) and further developed by Pawson (2006), is an evidence-based methodology that bridges outcome and process evaluation. It is particularly useful in this context, as it provides a useful tool for the judgments required in audits of psychosocial risks. This approach offers a suitable method to evaluate the effectiveness of OHS interventions (Pedersen et al., 2012). The realistic evaluation has a scientific theoretical foundation in critical realism (Sayer, 2000; Bhaskar, 1978) and questions the logical-rational understanding of causality. In the logical-rational understanding of causality, the understanding of causality is linear or simple, and the purpose is to obtain context-independent and global knowledge of whether there is a secure universal causal connection between intervention and effect (Danermark et al., 2002). However, this approach does not embrace complex interventions or issues, which are dependent on their context (Kazi, 2003).

Realistic evaluation provides an opportunity to integrate context-independent global knowledge with context-dependent local knowledge. It offers an analysis aimed at discerning what works for whom, in what circumstances and respects, and how (Pawson and Tilley, 1997). "What works for whom" expresses the underlying mechanisms that work beneath the observable empirical surface. "When and under what conditions" expresses that the specific context, in which the intervention takes place, must be involved in the evaluation. The point is that when focusing on context, the evaluator must have access to local knowledge and experience to assess the cause of the effect (Pawson and Tilley, 1997). Realistic evaluation builds on both qualitative and quantitative methods (Kazi, 2003). With regard to audits of the psychosocial risk management system, it is often suitable to use qualitative methods to gain access to local knowledge (Bergh et al., in press). Qualitative methods provide the auditor with the opportunity to obtain statements and observe attitudes regarding work organization and management that have implications for the risk management process and the actual psychosocial work environment.

For the auditor, realistic evaluation offers a systematic method to reflect on the mechanisms in the management system. The key question would be whether there are mechanisms that can ensure that procedures and action plans are likely to result in a sufficient standard for a safe and healthy psychosocial work environment. In answering this question, the audit must fulfill the requirements for reliability and validity, which are particular challenges for qualitative data. We will discuss this issue in the next section, building on Kvale and Brinkmann (2008), who understand interviewing as both a craft and a social practice.

5.2. Valid and reliable evidence created through qualitative interviews

The question of validity and reliability relates to what can be considered as evidence in audits. We build on qualitative interviews as the dominant method for collecting data on the management of psychosocial risks. Knowledge created through qualitative interviews is not simply 'collected'; it is actively created through questions and answers in a cooperative endeavor between the auditor and the auditee. Thus, the knowledge created through qualitative interviews is contextual, inter-relational, and inter-subjective and, at the same time, it must count as audit evidence. The standard objection to interview data is that it is not objective. However, objectivity is an ambiguous concept. In this context, the requirement for information to count as reliable knowledge is that it is systematically checked and verified and unaffected by the personal attitudes and prejudices of the interviewer (Kvale and Brinkmann, 2008).

Verification for interviews should refer to the process by which the reliability, validity, and generalizability of the results are ensured. Here, we wish to reinterpret these concepts in ways that are relevant and suitable for the production of evidence in the audit situation. The first part of the quality control of data collection through interviews is reliability, which concerns the consistency and credibility of the results. Using quantitative methods, reliability refers to whether the results can be reproduced at other times by other individuals using the same methods (i.e., replicability). The requirement of reproducibility is difficult to enforce in qualitative methods because changes in the data collected can be expected, both as a result of being interviewed as well as the fact that time will have passed before a new interview is conducted. The important question with regard to reliability in qualitative approaches is therefore whether we are measuring what we believe we are measuring. Thereby, from a broader perspective, validity concerns whether a method examines what it aims to investigate. The answer to this question can be obtained in several ways. During the interviews, it can be achieved by the selection of interviewees and by the interviewing technique, such as asking about specific examples and checking answers between interviewees. Such an interview methodology for psychosocial risks has been developed by the Danish Working Environment Authority (Rasmussen et al., 2011). Following the interviews, the triangulation of data from difference sources, such as observations and documents, can strengthen the validity (Yin, 2009). With such techniques, qualitative interviews can, in principle, lead to valid evidence (Kvale and Brinkmann, 2008).

Qualitative interviews do not focus solely on the perspectives and experiences of management, employees, and other stakeholders. In many qualitative interviews, it is also necessary to obtain information from other sources. Because of the participatory approach, however, the auditor receives information from individ-

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ual representatives of management and employees, and the information is interpreted in an organized dialogue between the interviewee and auditor (Jespersen et al., 2016b; Starheim and Rasmussen, 2014; Bruhn, 2006). At the end of the interview, it is therefore a part of the validation that the auditor summarizes the opinions the interviewees have expressed, in key points and main themes. This allows the auditor to check whether he or she has understood and interpreted the interviewees' opinions correctly.

To conclude, the qualitative interview is specifically suited for obtaining relevant, local evidence concerning the employees' daily experience, their perception of the risk assessment, and their attitudes towards reducing what they view as psychological risks. Conducting qualitative interviews is a systematic way of gathering evidence (Kvale and Brinkmann, 2008), and the purpose of an audit, as mentioned, is to create evidence that can be used for decision-making. Hence, the quality of the actual interview, its reliability, and validity, are crucially important (Robson et al., 2012). However, validation is not only an issue to consider for the interviews, but should also permeate all stages of the audit process, from initiating the audit to preparing the audit report. Specifically, this means that, in all phases, the auditors must justify the steps they take, i.e. why they behave, think, say, and interpret as they do. The qualitative interview is therefore similar to other evidence-based methods in its demands for validity, reliability, and a systematic data analysis process, although it differs from traditional approaches in the way these concepts are applied (Kvale and Brinkmann, 2008).

5.3. New auditor competencies

In the assessment of compliance based on the combination of generalized and local knowledge, the competencies of the auditor are crucial. The OHSAS 18001 and ISO 19011 only require auditors to be qualified, and do not specify the required qualifications. Because of a lack of specification standards, professional subjective judgments now take a prominent position (Jespersen et al., 2016b). That a judgment should be based on professionalism means that an auditor has a thorough knowledge – based on global evidence – regarding psychosocial risk factor issues, including work organization and management, preventive-organizational level interventions, and good management practice. The global evidence, while not related to the particular workplace being evaluated, nevertheless helps to qualify the auditor's professional judgment in a local setting.

Auditors must be able to assess the quality of the various elements of the psychosocial risk management process. In this capacity, they should address an array of risks, such as work organization and management that require them to move beyond checking compliance with prescriptive standards and into territory where they must strive to achieve a better understanding of what lies behind the psychosocial risk management process. Walters et al. (2011) argued that most auditors lack this knowledge and, because of their techno-legal traditions, are simply not well prepared to audit the management of psychosocial risks. Organizational causes for psychosocial risks and problems are not amenable to the kind of technical solutions with which traditional safety audits are perhaps most associated.

Qualitative interviews are an appropriate method for gaining relevant and legitimate audit evidence. Particular competencies are required to conduct such qualitative interviews and to ensure methodological objectivity (Kvale and Brinkmann, 2008). This includes knowledge of the themes to pursue in the interview process and expertise on the dynamics of the interaction between the auditor and the auditee. The auditor should be able to structure and manage the interview process, able to pose clear, simple, and understandable questions, and should be able to function as an active listener.

6. The basic principles for auditing management of psychosocial risks

We can sum up the above discussion in a conceptual model with six basic principles for auditing psychosocial risk management. This conceptual model takes into consideration the particular features of psychosocial risks characterized by unclear cause-effect relationships, ambiguities, and conflicting interests. These characteristics result in rendering it almost impossible to develop and lay down unequivocal specification standards for management of psychosocial risks. In spite of these challenges, the audit principles based on the risk management principles in the PAS 1010 and building on realistic evaluation and qualitative interviews may qualify an audit of management of psychosocial risks, or in other words, make psychosocial risk management more auditable. The principles are as follows:

- Psychosocial risks are acknowledged to be of a qualitatively different nature than more traditional OHS risks, as most psychosocial risks can be characterized as wicked problems. Solutions are therefore dependent on the context in which they occur.
- Management of psychosocial risks in certified OHS management systems is understood as a social process based on dynamic and complex conditions. Solutions are influenced by diverse perspectives due to differences between management and employees at different levels in the organization and by other internal and external stakeholders.
- Different methods can be used to create data and gain relevant and legitimate evidence. In particular, the qualitative interview is used as the key tool.
- Due to the character of psychosocial risks, it is necessary to make assessments of compliance based on a combination of decontextualized scientific knowledge and local practical knowledge. Compliance must be developed through the explicit use of diverse sources of knowledge, and the auditor has to interpret reported experiences from different perspectives, making judgments on whether the regulatory requirements have been met.
- The assessment implies an expanded understanding of what is valid and reliable audit evidence. It is important that evidence comes from a variety of sources and that assessment of compliance with legal and other requirements relies on both context-independent and context-dependent evidence - in other words, on global and local evidence.
- The context-independent evidence is based on the auditor's general expertise of psychosocial risks. This knowledge helps to qualify the auditor's professional assessment by creating an informed basis from which auditors can assess the context-dependent evidence generated from the local context.

Developing a set of principles for auditing psychosocial risks in OHS management systems entails the challenge of transforming these principles into audit practice. There are important issues related to the understanding of valid audit evidence within the established and dominant audit discourse and auditor competencies. The established audit discourse appears to have a narrow understanding of how to gain valid evidence because auditors have a tendency to focus on tangible evidence such as documents and other directly observable artifacts (Power, 1997; Gallagher et al., 2003; Poksinska et al., 2006; Blewett and O'Keeffe, 2011; Boiral, 2012; Jespersen et al., 2016a). In this way, the established audit

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discourse primarily deals with the tip of the organizational iceberg (French and Bell, 1999). Such a focus is therefore inadequate when it comes to the management of psychological risks (Hohnen et al., 2014; Bluff and Gunningham, 2004; Gallagher and Underhill, 2012). To improve the quality of audits, auditors thus have to include informal aspects and the, often invisible, psychosocial risks. Thereby the shortcomings in the traditional audit approach may be remedied, as the auditors move beneath the tip of the iceberg and focus on aspects that are more revealing for proper psychosocial risk management. However, auditors and their employers in the certification bodies face the challenging task of transforming the abovementioned basic principles into tangible interview guidelines and analytical assessment methods as well as upgrading the qualifications of the auditors carrying out audits of the management of psychosocial risks.

7. Conclusion

To appropriately implement the audit for psychosocial risk management, it is necessary to develop a methodology that takes into consideration the wicked character of psychosocial risks. This paper has provided the basic model for such a methodology. Audits for psychosocial risk management must not only be able to address the particularities of psychosocial risks, but must also respect the audit principle of gaining valid and reliable evidence as well as corresponding knowledge to support the decisions needed to improve the psychosocial work environment. However, what can be considered as valid audit evidence is a paradigmatic question. The established audit discourse is heavily inspired by the positivist paradigm in which auditors primarily indicate nonconformities that only relate to issues that are directly observable or based on document scrutiny. Our proposal is that there needs to be an expansion of the knowledge base, building on the psychosocial risk management principles mentioned in the PAS 1010 standard, along with realistic evaluation principles in conjunction with qualitative interviews. It is thereby possible to develop a knowledge base building on both general scientific knowledge and experience-based local knowledge.

The audit concept has implications for the role and competencies of the auditor, and there are obvious challenges in converting these audit principles into audit practice. One of these challenges is upgrading auditor competencies. Using the proposed model requires that auditors are able to make judgments based on professional reflections; the requirements in the standard for regulation of psychosocial risks are subject to auditor interpretation. Knowledge and skills development should therefore be undertaken to improve auditors' qualifications in assessing and evaluating psychosocial risks as well as the psychosocial risk management process. This upgrading of competencies must include a description of methods for the auditors and guidelines on the kind of methods to use and how to use them when auditing management of psychosocial risks in certified OHS management systems. Subsequently, the methods and tools have to be tested systematically so that the methodology developed can be evaluated, and when necessary, revised. The ultimate goal is, however, to develop an audit methodology and a toolbox that can work as effective instruments to regulate the psychosocial work environment in practice. Further development and testing of such a methodology is therefore required.

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